

JPRS 76149

1 August 1980

China Report

SCIENCE AND TECHNOLOGY

No. 49



FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available from Bell & Howell, Old Mansfield Road, Wooster, Ohio 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

CHINA REPORT
SCIENCE AND TECHNOLOGY
No. 49

CONTENTS

APPLIED SCIENCES

Scientific Expedition to Lop Nur in 1979 Reported (Zhao Changchun; XINHUA Domestic Service, 1 Jul 80)....	1
New Album on Country's Glaciers Published (XINHUA, 10 Jun 80).....	3
Noted Zoologist Notes Fauna of Qinghai-Xizang Plateau (XINHUA, 20 Jun 80).....	4
Briefs	
Limestone Area Biological Survey	6
Qinghai Archeological Discovery	6
Qinghai-Tibet Plateau Map	6
Altay Mountains Exploration	7
French Geological Agreement	7

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

Scientists Calls for 'Sociology of Science' Study (XINHUA, 13 Jun 80).....	8
Restoration of Scientific Information University Supported (Yang Jihu; BEIJING RIBAO, 3 Jul 80).....	9
Briefs	
Operations Research Society	10
Radiation Medicine Society	10
Neurophysiologist 'Threshold' Winner	10
Scientists to Japanese Exhibit	11

ABSTRACTS

Architecture

JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] No 3, May 80.....	12
--	----

Computers

ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] No 1, Jan 80.....	23
ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] No 2, Apr 80.....	28

Electronics

WUXIANDIAN [RADIO] No 4, Apr 80.....	33
WUXIANDIAN [RADIO] No 5, May 80.....	36

Geology

DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY] Vol 54 No 1, Feb 80.....	39
DIZHI XUEBAO [ACTA GEOLOGICA SINICA] Vol 54 No 2, May 80.....	46

Oceanology and Limnology

HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] Vol 11 No 2, Apr 80.....	54
--	----

Physics

GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] Vol 4 No 1, Jan 80.....	73
GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] Vol 4 No 2, Mar 80.....	82
GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] Vol 4 No 3, May 80.....	92

PUBLICATIONS

Table of Contents of 'DONGWU XUEBAO' No 4, 1979.....	104
Table of Contents of 'LINCHAN GONGYE SHEJI', January 1980.....	106

APPLIED SCIENCES

SCIENTIFIC EXPEDITION TO LOP NUR IN 1979 REPORTED

OW011335 Beijing XINHUA Domestic Service in Chinese 0752 GMT 1 Jul 80

[Newsletter by XINHUA reporter Zhao Changchun: "What I Saw and Heard in the Lop Nur Area--On a Study Tour by an Expedition Led by Peng Jiamu in 1979"]

[Summary] Urumqi, 1 Jul--"In the winter of 1979 an expedition led by noted scientist Peng Jiamu visited and studied the Lop Nur area. The expedition was composed of geographers, chemists, meteorologists, biologists, soil and desert specialists and archeologists. I stayed more than 20 days with the expedition in the Lop Nur area, saw the desert landscapes there and witnessed Peng Jiamu's and the other scientific and technical workers' selfless devotion to the four modernizations."

The expedition's cars followed the Gobi highway northwest of Lop Nur and then entered a yardang area in the desert. The scientists began work at Longcheng [Dragon City], an area with typical yardang terrain northeast of Lop Nur. The whole area is covered by a thick layer of salt crust.

"The geographers took pictures of the land formations and hurriedly made notes. Carrying bags, the archeologists searched high and low for ancient cultural relics. To Peng Jiamu, the area was like a treasure land. He and other comrades, carrying small shovels and bags, went to the bottom of the ancient Lop Nur basin to collect mineral samples [yan lei yang pin 7770 7352 2876 0756]. After a preliminary survey, they held that there was an abundance of sylvite and possibly rare metal and heavy water resources in the area."

The Lop Nur area is full of historic relics since human activities began in the area as early as in the New Stone Age. During our journey, we saw many vestiges of beacon towers, buildings, ancient cities and ancient tombs. Peng Jiamu and the other scientists walked 4 hours to study the site of the world-famous Loulan ancient city. They took pictures and collected soil samples there.

"In the Lop Nur area, there are not only large mineral deposits which make good raw material for developing chemical industry but also a great variety of wild plants grow there. The scientists found large tracts of 'Lop hemp' in the lower reaches of the Tarim and in the Kongqi River valley." Some wild animals, such as wild camels, sheep, deer and boars, live in the Lop Nur area.

CS0: 4020

APPLIED SCIENCES

NEW ALBUM ON COUNTRY'S GLACIERS PUBLISHED

OW101250 Beijing XINHUA in English 1243 GMT 10 Jun 80

[Text] Beijing, June 10 (XINHUA)—China's glaciers store an estimated 2,300,000 million cubic metres of water, according to an album on glaciers newly issued by the Shanghai Science Press.

Titled "China's Glaciers," the album contains more than 200 colour photos and is divided into four parts: life of glaciers; their distribution; natural resources in glacial regions; and exploration and exploitation of glaciers. Photographers risked their lives in taking some of the pictures.

China's glacial resources are distributed over a total area of 44,000 square kilometres, accounting for 40 percent of Asia's glacial area.

The Yangtze River and Yellow River, China's longest and second longest rivers, originate in glacial regions.

China's earliest records of glacier surveys date back to the Tang dynasty (A.D. 618-907). Since the founding of new China, and 1958 in particular, Chinese scientists have surveyed the Qilian Mountains, Tianshan Mountains, the Himalayas and other parts of the Qinghai-Tibet Plateau, and obtained an overall picture of China's glaciers. The album reports their work and achievements.

The album was of great interest to Chinese and foreign scientists who attended the Beijing symposium on the Qinghai-Tibet Plateau which closed recently.

It was edited by the Lanzhou Research Institute of Glaciology and Cryopedology under the Chinese Academy of Sciences.

CSO: 4020

NOTED ZOOLOGIST NOTES FAUNA OF QINGHAI-XIZANG PLATEAU

OW200349 Beijing XINHUA in English 0216 GMT 20 Jun 80

[Text] Beijing, June 20 (XINHUA)--The fauna of the Qinghai-Tibet Plateau are neither very ancient nor entirely recent, but have distinctive characteristics of antiquity.

This is the new view set forth by noted Chinese zoologist Zheng Zuoxin (Cheng Tso-hsin) and collaborators at a recent symposium on the Qinghai-Tibet Plateau.

Professor Zheng, 73, said that the conclusion was based on the following facts:

1. There are only a few native genera on the plateau, such as pantholops (Tibetan antelope), pseudopodoces (brown ground chough or birds resembling crows), which indicates that the fauna as a whole cannot be considered as very ancient; on the other hand, the existence of endemic genera is in itself evidence that the plateau fauna are not entirely recent.
2. The eastern margin of the plateau, not being much affected by the influence of glaciers, formed a shelter for some relics, such as the giant panda, and the Chinese hazel grouse. The presence of relics is doubtless an indication of antiquity.
3. Some animals have existed on the plateau for a long time and have become centres of distribution, such as snow finches and pikas. They have frequently been found in the same burrows, showing that in the long history of evolution they have become ecologically associated with each other and have adequately adapted to the conditions of the plateau. Such a phenomenon is considered as additional evidence of antiquity.

The zoologist divided the Qinghai-Tibet Plateau into seven horizontal zoological infra-regions, each characterized by a special landscape and representative species of land vertebrates, particularly birds and mammals. As to the vertical distribution of animals, the zoologist said, the northern slope of Mt. Qomolangma may be divided into two vegetative

zones and the southern slope into four zones, each characterized by certain dominant species of animals. An analysis of vertical distribution of breeding birds has shown that most Palearctic species are found upwards of 3,000 metres, while most Oriental species are found below 4,000 metres.

Since the founding of the People's Republic of China, Chinese zoologists have made more than ten expeditions to study the fauna of the Qinghai-Tibet Plateau. Up to now 796 species of land vertebrates are known to live on the plateau including 191 species of mammals, 532 of birds and 49 of reptiles and 24 amphibians.

C30: 4020

BRIEFS

LIMESTONE AREA BIOLOGICAL SURVEY--Nanning, 23 Jun--Specimens of more than 1,200 varieties of ferns and seed plants have been collected from a limestone rock area in the Guangxi Zhuang Autonomous Region, southwest China. These were gathered by some 80 Chinese scientists during a survey of the Longgang nature conservation zone. The zone extends over 10,000 hectares in mountainous Longzhou and Ningming counties. Thanks to warm weather and abundant rainfall, shrubs, trees, ferns, moss and fungi flourish, many growing in fissures and cracks. More than 50 kinds of fast-growing trees have been found in the area. Many are of economic value for their straight trunk and hard wood. A newly discovered *Burretiodendron* Hsienmu tree stands at 48.5 meters, with a trunk 2.99 meters in diameter and 9.4 meters in circumference. It is estimated to be nearly 1,000 years old. Another find is over 30 meters high, laden with lantern-shaped, plum-sized fruit. It is named *Ailanthus Guangxiensis*, a new variety of the Simarubaceae family. [Beijing XINHUA in English 1219 GMT 23 Jun 80 OW]

QINGHAI ARCHEOLOGICAL DISCOVERY--Xining, 25 Jun--One of the earliest cities in Qinghai Province--2,000-year-old Caoduolong--was unearthed 160 kilometers southwest of Xining, capital of the province, in the course of excavating the reservoir for the Longyang Gorge hydroelectric power station on the Yellow River. The excavation of the city site has been going on since late 1977. The reservoir will begin to retain water this autumn. Archeologists discovered four other ancient city sites. Twenty-five cultural sites and cemeteries of primitive society have almost been dug up so far. The more than 15,000 relics found include one of the earliest bronze mirrors so far discovered in China. It was dug up from a tomb of primitive society, dating back about 4,000 years. It is of the Qijia culture. The ancient city is approximately square, about 500 meters on a side. [Beijing XINHUA in English 1244 GMT 25 Jun 80 OW]

QINGHAI-TIBET PLATEAU MAP--Beijing, 21 Jun--A new map of the Qinghai-Tibet Plateau drawn by the Institute of Geography under the Chinese Academy of Sciences has been printed by the Chinese Cartography Publishing House. The new map, with a scale of 1:3,000,000, is based on a survey of the plateau done in the late 1970's. It corrects some

inaccuracies of previously published maps. For instance, the new map marks Mount Mustagata, the highest peak in the middle of the Kunlun Mountains, as 6,913 meters above sea level in height, rather than the 7,723 meters on earlier maps, and the altitude of Mount Kangrinboqe, the highest peak in the Gangdise range north of the Himalayas, has been changed from 6,714 meters on old maps to 6,656 meters on the new map. Another mistake on older maps, the transposition of two large lakes on the upper reaches of the Yellow River, Gyaring Lake and Ngoring Lake, has also been rectified. In addition, a number of significant mountains have been mapped for the first time, including the 6,627 meter-high Geladaidong Mountain which several years ago was identified as the true source of the Yangtze River. The new map makes clear the basic geomorphic features of the plateau, including the distribution of high mountains, low hills, deep valleys, big lakes and basins. [OW231442 Beijing XINHUA in English 0746 GMT 21 Jun 80 OW]

ALTAY MOUNTAINS EXPLORATION--Urumqi, July 1 (XINHUA)--A scientific study team of some 100 scientists and professors have left here on an expedition into the Altay Mountains in the northern part of the Xinjiang Uygur Autonomous Region. The area with modern glaciers and rare plant and animal life is one of China's natural reserves. The wolverines, sables, stone martens, snow weasels, grouse, white partridge and snow pheasants found here are all rare species now in the world. A rare species of beaver with a population numbered only in the dozens live in the Altay's Burgen River valley. [Text] [OW010250 Beijing XINHUA in English 0241 GMT 1 Jul 80]

FRENCH GEOLOGICAL AGREEMENT--Beijing, 7 Jul--Chinese and French geologists will make a joint study of underground water in the 36,000-square-kilometer Heilonggang area of eastern Hebei Province, north China, the Ministry of Geology announced today. The study is one of the cooperative items specified in a protocol signed recently in Beijing for the 1980-1981 plan for exchange of geological science and technology between China and France. Joint research on hydrogeology in Guangxi Zhuang Autonomous Region, south China, one of the country's main karst areas, is being planned. The items mentioned in the protocol include: a joint centre to handle geological data, publication of such geological data as maps and the exchange of mineral specimens. Both sides will exchange experience in research on the causes of the formation of tungsten and chromite deposits and methods for finding them. In addition, geological statistics, ore-dressing and terrestrial heat are listed for cooperative work. The details and requirements are to be decided later through consultations. [Beijing XINHUA in English 0725 GMT 7 Jul 80 OW]

CSO: 4020

SCIENTISTS AND SCIENTIFIC ORGANIZATION

SCIENTIST CALLS FOR 'SOCIOLOGY OF SCIENCE' STUDY

OW131334 Beijing XINHUA in English 1984 CMC 13 JUN 80

[Text] Beijing, June 13 (XINHUA)--Qian Xuesen, a leading Chinese aerodynamics expert, has called for the development of a new discipline of science--"the science of sciences"--in China. He says it will help raise China's organizational and management levels in science and technology and speed modernization.

Qian Xuesen articulates the views in an article entitled "On the Establishment and Development of a Marxist Study of the Science of Sciences" which will appear in the first issue of a new quarterly magazine, SCIENTIFIC RESEARCH MANAGEMENT.

The new discipline, also known in the United States as "the sociology of science," is devoted to the study of laws governing scientific and technological activities and their relationship with social developments as a whole, Qian Xuesen says.

Science and technology in themselves are not productive forces, but can be transformed into productive forces, he notes.

He says that China must carry out reforms in economic management so that science and technology can be put to best use in production.

The new quarterly which contains the article is being published by China's Science Press. The journal's purpose is to discuss the laws and characteristics of modern scientific and technical developments. It will also examine science and technology policies of foreign countries, foreign scientific research methods and the training of scientists and technicians.

CSO: 4020

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

RESTORATION OF SCIENTIFIC INFORMATION UNIVERSITY SUPPORTED

Beijing BEIJING RIBAO in Chinese 3 Jul 80 p 2

[Article by Yang Jihu of Plant 109, Chinese Academy of Sciences]

[Text] In the course of China's construction of the four modernizations, whether it is the development of science and technology or the promotion of industrial and agricultural production, etc., both require the introduction of advanced foreign technology. In order to introduce advanced foreign technology, we must translate and edit foreign articles for the masses of scientific and technical personnel to use. We cannot rely solely on the students who come out of our regular science and engineering colleges to undertake this complex and heavy task in its entirety. We must train specialists in the field of scientific information if we are going to be able to satisfy China's need for introduced technology. In 1958, under the leadership of Guo Moruo, the Chinese Academy of Sciences founded the Chinese University of Science and Technology and the Chinese University of Scientific Information. The prime purpose of the Chinese University of Scientific Information was to train personnel specializing in the introduction of foreign technology. What is regrettable is that it flowered very briefly, training only one class before being abolished. This makes us think that, in the last 20-some years, had we resolutely continued to run this university, by now we would have an entire generation of trained personnel who would be extremely useful in the introduction of advanced foreign technology! It seems to me that, regardless of what approach China takes in the future regarding the training of scientific information personnel, the aim of the Chinese University of Scientific Information is still worth studying. I hope that this flower of the socialist era can once again blossom in all its glory.

CSO: 4008

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

BRIEFS

OPERATIONS RESEARCH SOCIETY--Jinan, 9 May--The Society of Operations Research attached to the Chinese Mathematical Society has been established. Professor Hua Luogeng, president of the Mathematical Society, was elected president, and Yue Minyi, research fellow of the Institute of Applied Mathematics, Xu Guozhi, research fellow of the Institute of Systems Science, and Yu Qianxiu, professor of the Dalian Mercantile Marine Institute, were elected vice-presidents. The council has 11 permanent members and 42 members. Operations research is used in solving problems in economic planning and construction by the use of mathematics. Study of this subject in China started during the mid-1950's. China has made some world level achievements in the theoretical study of this subject. [Text] [Beijing XINHUA in English 1312 GMT 9 May 80]

RADIATION MEDICINE SOCIETY--Beijing, 4 July--China has set up a Society for Radiation Medicine and Radiation Protection. Bi Zhixian, deputy director of the Industrial Hygiene Bureau of the Ministry of Public Health, was elected president of the society. China started research on radiation medicine and protection in the early 1950's. At present, 5,000 researchers and technicians are working in this field. The First National Forum on Radiation Medicine and Protection was recently held in Beijing. Five hundred thirty-one papers on radiation hygiene, radiation toxicology, radiation protection and related subjects were sent in. China recently has carried out surveys in areas of high natural radioactivity. [Beijing XINHUA in English 0717 GMT 4 Jul 80 OW]

NEUROPHYSIOLOGIST 'THRESHOLD' WINNER--Beijing, 22 Jun--Chinese neurophysiologist Zhang Xiangtong has won the "Threshold" prize of 1980 for his contributions to the study of the analgesic principles of acupuncture, sharing \$50,000 with two foreign prizewinners, the GUANGMING DAILY reported today. The 73-year-old research professor at the Shanghai Institute of Physiology under the Chinese Academy of Sciences has been studying the analgesic principles of acupuncture for more than a decade. After numerous experiments on animals and his own body, he put forward this hypothesis: Analgesia by acupuncture can be explained as a kind of brain function, or the result of the interaction of messages of the pain

sensation and that of acupuncture transmitted to the central nervous system. The Threshold Foundation was established in 1978, with its head office in London. The organization encourages researches that combine cultural traditions and scientific achievements of different nations. It issues prizes once a year. [Beijing XINHUA in English 1200 GMT 22 Jun 80 OW]

SCIENTISTS TO JAPANESE EXHIBIT--Beijing, July 3 (XINHUA)--A five-member delegation of Chinese scientists left here for Tokyo by plane this morning to attend the opening ceremony on July 5 of the Peking ape-man exhibition. The invitation was issued by the Japan-China Cultural Exchange Association. The delegation is headed by Zhao Beike, deputy secretary general of the Chinese Academy of Sciences. Its members include Professor Wu Rukang, palaeoanthropologist and deputy director of the Institute of Vertebrate Palaeontology and Palaeoanthropology of the academy, and Professor Jia Lanpo, archaeologist. The exhibition will be the first Chinese exhibition of human fossils to be held abroad. It will be held successively in Tokyo, Osaka, Nagoya and Kitakyushu over a period of seven months. The delegation will tour these places and have academic exchanges. [Text] [OW031250 Beijing XINHUA in English 1238 GMT 3 Jul 80]

CSO: 4020

Architecture

AUTHOR: LIANG Sicheng [2733 1835 2052]

ORG: None

TITLE: "Design Project of the Memorial Hall for Buddhist Master Jian Zhen"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 1-4

TEXT OF ENGLISH ABSTRACT: The year 1963 was the 1,200th anniversary of Buddhist Master Jian Zhen's death. In order to commemorate this great envoy of cultural exchange between the Chinese and the Japanese people, it was decided to erect a memorial hall for the Master in his native place--Yangzhou, Jiangsu Province. The late professor Liang Sicheng of Qinghua University was appointed chief architect for the design work, and the construction was completed in 1973.

The memorial hall stands on a hill in the northern suburbs of the city, and to the southwest of the site is the ancient Daming Temple, where Jian Zhen served as abbot before he went to Japan. This building is a wooden structure of five bays long and three bays deep, designed in traditional architectural

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 1-4]

style. On the main elevation the wall plane is set back on the second line of columns, thus creating a colonnade. Flanking the hall are covered corridors which link it with the stupa pavilion on the south to form a courtyard. The design of the hall, including its frontage treatment, bracket system and roof line, reminds one of the Golden Hall of Toshodaiji in Nara, Japan, a fine surviving example of Buddhist architecture in the Tang dynasty style.

AUTHOR: CHENG Shifu [4453 0013 2329]

ORG: None

TITLE: "A Preliminary Study of Suzhou Traditional Garden Art in Adaptation to Modern Design"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 6-12

TEXT OF ENGLISH ABSTRACT: This article deals with the artistic achievements in traditional Suzhou gardens, such as spatial organization, technique of garden building, landscape elements, treatment of scale and proportion, etc.

Traditional garden art in Suzhou residences is characterized by the predominance of architecture in the entire scheme. Among landscape elements architecture comes first, and others, such as topography, mound, rockery, water features and ornamental plants, become subordinate in the composition.

The social life of feudal lords, after retirement from officialdom, consisted of enjoying their pastime in residential gardens, and very often holding receptions in banquet halls. Poetry, literature, calligraphy, painting and related arts, such as collecting antique sculpture and even rock, used to be their

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 6-12]

favorite hobbies.

Ordinarily those noblemen and the rich were physically weak; although they were very fond of nature, they could not resist cold and hot weather outdoors, and also were much annoyed at the long, nasty, rainy season. Thus, they often frequented pavilions, garden houses, or different sorts of shelters, connected with winding, usually zigzag corridors, over undulating topography, combined with a bridge across a creek or pond, so that people could enjoy garden scenes under protection.

Regarding landscape composition, water surface was always the dominant central feature of the garden, whether it was major or subordinate in nature. Owing to the limitation of city land, garden designers tried their best to utilize fully every bit of it, so as to maximize the effect of space within a rather small area. This is the so-called "xiao zhong jian da"--feeling spaciousness in a little place, i.e., extending the sense of vision within a very limited space in order to imitate natural spatial relations in "miniature landscapes." This was accomplished by the impact of absolute and relative scale and the application of optical illusion in proportion and perspective. The disposition of buildings, combined with artificial hills and pools, exquisite pavilions, terraces, shrubs and trees, was intended to create seemingly endless changing

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 6-12]

views. Openings, including doorways and latticed windows, in undulating walls and covered walks, usually offered views of ever-shifting light and shade. The detailed treatment of rectangular enclosed tiny courtyards or triangular "pockets" formed by walls, corridors or even houses, holds utmost attraction for visitors and residents as well. This may be referred to in designing passageways and circulation routes in public open spaces. Rockery, composed of grottos, overhanging bridges, cascades, hidden creeks, etc., are often too crowded and limited to access and circulation; therefore, for the sake of safety, it is inappropriate for public enjoyment.

The author summarizes the essentials of the traditional garden art as follows:

- (1) The framework of a scheme lays out the subdivision of major and subordinate garden spaces and their interrelationships in the landscape composition.
- (2) The design of houses and gardens adapts to natural topography and at the same time recognizes the existing conditions.
- (3) Visual extension by no means makes a miniature garden, but a miniature landscape in accordance with human scale; otherwise, it would be a failure in design.
- (4) The ingenious treatment of architectural details is intricate and interesting to visitors and residents as well.

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 6-12]

Finally it is proposed that the fulfillment of the requirements of contemporary life should be the prerequisite of adapting traditional garden art to modern design. Furthermore, open glade can take the place of water surface as the central feature in the garden; courtyards may become the extension of living space outdoors. Also, some comments were made on the old and new designs of the Humble Administrator's Garden (Zhuzheng Yuan) as to the maximum effect of space in the central garden and the treatment of meadow in its newly reconstructed east portion.

AUTHOR: FANG Zhichong [1690 1807 0394]
LI Wenzuo [2621 2429 0146]

ORG: None

TITLE: "Analysis of Layout, Greenery and Scenery of the Wangshi Garden in Suzhou"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 13-15

TEXT OF ENGLISH ABSTRACT: The Wangshi Garden is situated at the end of a lane in the southeastern part of Suzhou. It was built in 1140 during the Southern Song dynasty by a high official. In the early Qing, the owner, professing to be above politics, styled himself Wangshi (a fishing man) and the garden was thus named. Although it covers only half a hectare and is the smallest of all the Suzhou gardens, its compactness and ingenuity give the visitor an artistic picture from whatever angle he looks.

Entering the garden, the visitor faces the owner's residence, which occupies the eastern part of the site and consists of two stories of chambers, as well as three courtyards. To the west of the residence is the garden, with a pool at the center as the focus of interest. It takes up about one-fifth of the

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 13-15]

garden area and is surrounded by pavilions and verandas, covered corridors, winding bridges and artificial hills. The bank of the pool was paved with rocks arrayed naturally in lines to enhance horizontality, and the waterside buildings were exquisitely designed so as to match the size of the garden in scale.

To the west of the pool is the 500-square meter Garden of Late Spring. The bamboo house was the owner's study decorated with palace lanterns and black-wood furniture as well as scrolls of calligraphy and painting. In a small courtyard only two meters across, between the study and the back wall, bamboo, banana and plum trees grow among artificial rocks. Looking at them from the windows of the study, one seems to see three framed Chinese landscape paintings on the wall.

The spatial composition of the garden is distinguished by the interplay of solids and voids and the interpenetration of indoor and outdoor spaces. The planting arrangement is also skillfully designed to combine organically with the buildings, artificial hills and flower beds.

AUTHOR: SHE Junnan [0152 3975 0589]

ORG: None

TITLE: "Can High-Quality Design Be Created Under Financial Restraints?"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 16-19

TEXT OF ENGLISH ABSTRACT: The Friendship Theater in Guangzhou is a medium-sized, multi-purpose theater with a seating capacity of some 1,600. It was completed in August, 1965. Although its building cost is comparatively low, only about 120 yuan per square meter, it has been universally praised for its high quality both functionally and architecturally through its 14-year usage. This article is written by the architect, who has briefly described his experience in elaborating the design concept.

Rational layout, compact plan arrangement and full utilization of architectural space have been considered so as to achieve the aim of cutting down building cost. The author holds that more often than not a good design project is created under financial restraints.

The warm climate of south China leads to the adoption of an open plan for the

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 16-19]

theater, the indoor architectural space blending harmoniously with the outdoor landscaping. The introduction of greenery into the foyer, staircases extending into the courtyards, and plants creeping along the balustrades up to the second floor--all this is intended to create a pleasant environment for the audience when they shift from indoor enclosed space to outdoor open space at intermission.

In the moderate-sized foyer there is the main staircase asymmetrically planned on its right side with a large glazed panel commanding the courtyard, and under the staircase is a pond dotted with rocks. In the auditorium design the architect tries to use intimate scale, crisp lines and light tones instead of rich embellishment. Careful economic considerations result in the wide use of common finishing materials for walls and floors, except that the columns in the foyer and the frames of entrance doors are faced with marble.

AUTHOR: WANG Shiren [1769 0013 0088]

ORG: None

TITLE: "Realizing the National Form Afresh"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 27-33

TEXT OF ENGLISH ABSTRACT: The writer holds that "national form" is a correct slogan. In the early part of the fifties the slogan "national form and socialist content" prevailed in the field of architectural creation in China, but later on it became a synonym for revivalism, i.e., the doctrine of "back to the ancients." Originally national form was an objective phenomenon existing in history; under the basically similar natural, economical and social conditions, the architecture of every nation has its own characteristics, which are what we call national form. Therefore, it is necessary to realize the significance of national form afresh.

Secondly, in the writer's view, the striking feature of the Chinese traditional architecture is the high integrity of its artistic form, and one of its most prominent aspects is the organic relationship between the ensemble and individual buildings. For instance, in some imperial gardens in the Qing dynasty,

[Continuation of JIANZHU XUEBAO No 3, May 80 pp 27-33]

the design of most buildings was based on a limited range of standard structural and architectural elements; but they were so ingeniously laid out, often linked to each other by covered ways, as to create a series of varied and attractive spatial compositions.

Thirdly, some important achievements in traditional architecture have been expounded in detail, such as: (1) the artistic treatment of partitioning by means of screens, furniture, etc., in simple, stereotyped plans; (2) boldly exposed structural elements with strong expressiveness; (3) the assimilation, fusion and transformation of architectural form learned from foreign countries and so forth.

9717

CSO: 4009

AUTHOR: FAN Yaobang [5400 5069 6721]

ORG: Beijing Municipal Bureau of Planning

TITLE: "Some Opinions About Reasonable Density of Residential Quarters"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 20-23

ABSTRACT: In Beijing as well as other cities of China, the tendency is to have higher and higher density in residential projects. The lack of experience in the 50's caused a blind imitation of the Soviet Union to result in a residential land utilization of 20-25m²/person. Considering the ratio of 1.55 mu of arable land /person in China, this was not reasonable, yet residential quarters must satisfy the basic needs of daily living, including sunlight, fresh air, and places for children to play and adults to rest. Four concrete standards are; therefore, proposed: (1) There must be reasonable space between buildings; (2) Each building must have a certain green space; (3) There must be a suitable area for public buildings; (4) There must be an additional green area for public use of the entire project. These 4 requirements are discussed at length. Various data are introduced to balance basic needs of residents with the objective need for high density to arrive at a definition of reasonable density.

AUTHOR: LIU Yirong [0491 4135 5554]

ORG: None

TITLE: "Diminish Frontage Width to Save Land"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 24-26

ABSTRACT: In Feb to Apr 78, in the process of evaluating the plans for residential quarters in Tangshan City proposed by more than 20 designing units of the country, it was noticed that the population density of most plans is below 750 persons/hectare, while the plan of Beijing Municipal Academy of Architecture is above 800 persons/hectare, with conditions of ventilation and sunlight no worse than the other plans. The major reason for this economic efficiency is a reduced width and increased depth for each individual unit. Data of several existing residential projects are given to prove that when the width or frontage of a unit is reduced from an average of 5.1 m to 3.72-3.88 m, 1.48 percent of the land may be saved. The relationship between frontage and land use is analyzed.

AUTHOR: WU Yongzhen [0702 3057 4631]

ORG: None

TITLE: "Reflection of Feudal Ideology and Traditional Habits in Architecture"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 34-35

ABSTRACT: Although China is a great nation of socialism, the tradition of more than two thousand years of feudalism still has its impact on architecture. (1) Feudal ideas of self sufficiency and class distinction have resulted in demands of separate entrance, high walls, etc. Even shared chimney is unacceptable for some. In public buildings, separate lounge, dining room, barber shop etc. are designed with extra care for VIP's. (2) In architectural form, instead of function, modern materials and construction technique, and economy, the traditional, the so-called national form are preferred to pursue the grandiose, symmetry, and class. (3) Among the leaders in architecture, a serious paternal attitude exists while democratic and scientific attitudes are deficient. The author believes that timely decisions by related leaders concerning the scale, policy, and design principle of buildings are needed, but many technical problems and artistic rendition should be left to the architects. For example, one leader looked at a Y-shaped design and said: "That would not do. It looks like a pair of pants." He would not even think of the fact that this design provides a better orientation for more rooms.

AUTHOR: LIN Chen [2651 2525]
ZHANG Renqi [1728 0086 3823]
LIU Li [0491 0500]
XU Zhen [1776 6966]

ORG: None

TITLE: "Actively Creating Conditions to Flourish Architectural Creation"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 36-37

ABSTRACT: To have glorious architectural creation, there must first be liberation of thoughts. To truly liberating thoughts, the origin of ideological bound must first be found. This paper lists several undesirable tendencies in architectural designing, among them (1) Pursuing formalism: putting balconies on every floor of a residential building more than ten stories high when there is no scenery to look at. (2) Everything must be big and tall to create serious waste. (3) Buildings in different places are monotonously alike. (4) Unwilling to learn and ignoring concrete conditions. (5) Influenced by leftist thoughts and enlarged class struggle, architects have for a long time been considered as a force contrary to the working class. Whenever there is a problem, the architect's family, his conversation, and his daily behavior are criticized instead of his designing work to cause architects to be afraid of talking, thinking, or doing anything. (6) The importance and scientific nature of designing are not recognized.

AUTHOR: ZHANG Heshun [1728 5440 7311]

ORG: None

TITLE: "A Memorial to Comrade ZHOU Enlai"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3,
May 80 p 38

ABSTRACT: In Oct 79, on the occasion of the 60th anniversary of Nankai University, a memorial to ZHOU Enlai on the island in the middle of the school's Mati Lake was unveiled. ZHOU Enlai graduated from the Preparatory School of Nankai in 1917 and went to continue his education in Japan. He returned in Apr 1919 and enrolled to belong to the first graduating class of Nankai University. Since the liberation, he visited his alma mater 3 times in 51, 57, and 59. The Mati Lake had been there when he was a student. It is a round island, 20 m in diameter, with a 8.6 m wide walkway linking it with the main campus. The island was the place ZHOU often came to rest as a student. It is quiet and beautiful, a fitting site for a memorial to that noble man. No matter how thorough was the consideration and how profound was the symbolic meaning of the design, it would still be very difficult for the memorial to express the majesty of his life. It expresses only the love of the people for him. The design idea and the site of the memorial are described.

AUTHOR: XIANG Duanqi [0719 7364 3843]

ORG: None

TITLE: "Design of Noise Control in High-rise Hotels"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3,
May 80 pp 39-44

ABSTRACT: This paper explains the measures taken for noise control in the new building of Beijing Hotel. The measures included those adopted to keep out the noise of city by special sound proofing of the exterior walls and windows, the insulated interior walls to keep the noise of one room from being heard in another, noise proofing of the floors between one story and another, sound proofing all interior doors, pipes, and utility rooms, as well as the elevator shafts. Several years of use of the hotel has demonstrated the effectiveness of these noise control measures.

AUTHOR: ZHOU Fengrui [0719 7364 3843]

ORG: None

TITLE: "Some Problems of Dust-Proof Workshop Design"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 46-50

ABSTRACT: Four floor plans are commonly used for dust-proof workshops: the corridor style, interior wall ventilation style, pillar ventilation style, the center court style. The advantages and disadvantages of each are discussed. Measures and rooms for cleaning and dust-proofing the workers and for fire prevention are suggested. Selection of building materials is important for the dust proof design. In the past, such high class materials as stainless steel were often used for interior wall surface to maintain cleanliness. In fact, many modern paint materials over concrete may be just as satisfactory. High efficiency dust filters installed in vertical draft type roofs are explained, as well as the difference in design for achieving different grades of dust proofing.

AUTHOR: WANG Peiheng [3769 0160 3801]
DONG Xuguang [5576 3291 1684]

ORG: None

TITLE: "Design of a Photosensitive Chemical Research Institute"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 51-53, 63

ABSTRACT: The building complex housing the Institute of Photosensitive Chemistry Chinese Academy of Sciences, its laboratory, and residential quarters was completed in 1977. The major job of the institute is in the study of photosensitive chemicals, while a large portion of the work consists of analysis and synthesis of organic chemicals. The building complex and grounds use up about 4 hectare of land. The paper emphasizes the design of the experiment building. The floor plans of the electron microscopy laboratory, the nuclear magnetic resonance laboratory, and the scale room are explained. The major design consideration is to connect the various individual units of the experiment building. The arrangement of a certain foreign laboratory is cited to demonstrate the problems and the solutions.

AUTHOR: YANG Yonglin [2799 3057 7881]

ORG: None

TITLE: "Two School Buildings in Nanjing"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 54-55

ABSTRACT: This paper describes the designs of the Renmin Middle School Classroom Building and the Chengxian Street Elementary School Classroom Building. Both schools are located in central district of the city of Nanjing. The former is a five-story building of a total of 5,634 m² of floor space, with 40 classrooms, 2 auditorium and biology laboratory combination, 2 physics laboratories and 2 chemical laboratories. The latter is in 3 interconnected parts, with the main building in 4 stories and 5 classrooms on each level. Each classroom has a maximum capacity of 54 seats. The ratio between the areas of the windows and the floors is 1:2.3 to arrive at an estimated natural lighting coefficient of 1/5.5. The paper includes photos of exterior and interior views of the schools.

AUTHOR: ZHOU Yihu [0719 6654 3275]
CHEN Leqian [7115 2867 6692]

ORG: None

TITLE: "Flexibility of Laboratory Design Abroad"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, May 80 pp 57-63

ABSTRACT: The design of a modern laboratory has 2 obvious characteristics: (1) Due to the extremely rapid development of science and technology, the contents of experiments, hence the design requirement of the laboratory, change continuously. Some designs often have to be revised in the construction process; therefore, the design must be conducive to change. (2) Modern scientific experiments require a high degree of precision, hence equipment for controlling the temperature, dust-proofing, and other protective and sanitation needs. Relationship between activities of the human body, the arrangement of the equipment, and the minimum work space in design considerations is analyzed. The science building of Harvard University, the IBM Thomas J. Watson Research Center, the Bristol Science Building in England, and several universities and research centers in Germany and Austria are used as examples to explain ways of designing laboratories to make them sufficiently flexible to meet the needs of modern scientific research.

AUTHOR: Shen Xubang [1088 4872 2831]

ORG: Shaanxi Institute of Microcomputers

TITLE: "Language-Oriented Microcomputer Research (Part 1: System Functions)"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 1, Jan 80 pp 1-13

ABSTRACT: In connection with continuation of the design of the Model 77 microcomputer, a 16-bit fixed point machine which uses only an assembler language and which is to be expanded to a 32-bit floating point machine, research into suitable algorithmic languages has begun. Using PASCAL as an example, the following aspects of system function are examined: data types and internal representation, and operational commands and their internal representation; statement structure and control commands, addressing forms, transfer, return and branch commands; and structured program design, specific program organization and the page stack.

AUTHOR: Chen Sanshi [7115 0605 2535]

ORG: Computer Center, CAS

TITLE: "An Introduction to Microcomputer System Programs"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 1, Jan 80 pp 14-23, 13

ABSTRACT: The basic functions of such system programs as assembler, compiler, linkage editor, simulator, debugger, editor, monitor and system package are described. System program packages include programs to implement frequently-used operations which are not part of the machine's normal capabilities such as floating point operation. The algorithm of the Hewlett-Packard CODIC (coordinate rotation) package is described, and the author describes a program package based on the principles used in CODIC which he designed to perform statistical operations.

AUTHOR: Wang Zuyong [3769 4371 3057]

ORG: None

TITLE: "The Architecture of the Series/1 Computers"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 pp 24-36

ABSTRACT: The IBM Series/1 computer is a new minicomputer series introduced in 1976. It is a 16-bit machine oriented toward commercial systems, sensors and communications systems, and is especially suited for real time operation. It uses either the 4953 or the 4955 CPU; the latter is considerably faster (367,000 operations per second) and can handle more memory. In addition, the 4955 incorporates an independent memory bus. There are two types of registers: system and operation registers. The former are used to hold information on processor operation and the latter to hold the level status blocks. Also described are the instruction set, stack organization and stack subroutines, floating point arithmetic, memory management, the interrupt structure and input-output organization. Because the Series/1 is a new development, it has not been fettered by earlier system design and incorporates advances in nearly all of the abovementioned areas.

AUTHOR: Cai Shijie [5591 1102 2638]

ORG: Nanjing University

TITLE: "The Microprogramming Design of the DJS-200/10 Computer"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 pp 37-45, 52

ABSTRACT: The DJS-200/10 is a low-level machine in the 200 series. Its microprogram has 1899 instructions, each of them implemented as a 10-segment 64-bit control word in read-only memory. The read-only memory is a hard-wired transformer-coupling type twin toroid design. The segmentation of the instruction word is organized to allow the machine resources to be operated in parallel rather than sequentially. The machine uses 13730 integrated circuits on 746 small insertable cards and 27 large boards; composite microcommands are implemented in 150 combinational circuits.

AUTHOR: Wang Yuheng [7806 3768 4801]

ORG: None

TITLE: "Some Thoughts on Magnetic Core Memory Development"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 pp 46-52

ABSTRACT: Because China's semiconductor industry is still backward, building semiconductor memories is not yet feasible and China must still rely on magnetic core memory. However, the progress made with magnetic core memory in the United States during the 1970's indicates the potential of the field. Work should focus on decreasing core spacing and improving quality, increasing speed and working current, increasing the size and strength of the wires. China has made some progress in developing cores with wider temperature stability. Larger core boards increase the probability of incorporating a wire or core malfunction, so focus should be on 4K x 9, 8K x 9 and primarily 16K x 9 boards, along with a few other types. Particular attention should be given to the location and arrangement of decoder diodes so as to decrease the size of boards. While great advances in speed are not likely, advances in power consumption characteristics and reliability can be made, and reliable operation at 50° C can be achieved.

AUTHOR: Li Yutang [2621 0645 1016]

ORG: Northwestern Electronic Communications Engineering Institute

TITLE: "Minicomputer System Architecture and Trends in Its Development"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 pp 53-69

ABSTRACT: Several trends in foreign and Chinese minicomputer design are examined. The layout of multibus, 3-bus (e.g. the DJS-100) and single-bus (DJS-183) systems is described. Differences in system facilities, word format and coding, the central control unit and management techniques are described. The DJS-130 uses combinational logic sequencing, while the DJS-183 uses fixed sequencing. Modularized memory organization and address formulation, including absolute, indirect, variable and relative addressing as well as stack and associative memories are described. The organization of the ECLIPSE, PDP-11/70 and VAX-11/780 are described in detail. Available programming languages are described.

AUTHOR: Ying Xuan [2019 3551]

ORG: Shenyang Institute of Computer Technology, CAS

TITLE: "Online Information Search Software"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 p 70-81

ABSTRACT: Possible information search types include; current awareness, retrospective search, offline search, online search, selective dissemination of information and question and answer systems. Files may be sequential, indexed sequential or random. The nature of file entries and the process of file and index scanning are described. Reverse index organization is discussed. An example and a flowchart of interactive search are given. Hashing methods and methods of dealing with conflicts are described. The factors governing speed of operation from terminals in an online system are examined.

AUTHOR: LI Longjiang [2621 7127 3068]

ORG: Beijing Institute of Aeronautics

TITLE: "A Method of Processing Arrays Larger Than 64 Kbyte in FORTRAN on the FELIX Computer"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 pp 82-84

ABSTRACT: Arrays larger than 64 Kbyte can be processed on the FELIX C-256 (or IRIS) computer in FORTRAN by use of the technique of common array linking. An instruction of the form COMMON /C/A (20000) will be rejected by the compiler, but by restating in the form COMMON/C/A (10000) /C1/A1(10000) the full array can be used, making use of the linking process.

AUTHOR: None

ORG: None

TITLE: "The JS-110 Industrial Control Microcomputer"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 1, Jan 80 inside back cover

ABSTRACT: The JS-110 minicomputer produced by the Shanghai Regulating Instruments Plant is an industrial control computer which can also be used for scientific calculations, industrial design and data processing. It improves on the JS-10A control computer and will go into series production in 1980. It is a 16-bit machine with 8K internal memory expandable to 60K. It is a single address, single accumulator, single bus machine and can be connected with the PDP-11 standard interface. It comes with an electrooptical input interface to obviate the need for a standard interface in certain cases. It does without special I/O commands. The main peripherals are a paper tape reader, teletypewriter, high speed tape punch, ball type typewriter, plotter, display and magnetic tape machine.

8480

CSO: 4008

AUTHOR: Liu Degui [0491 1779 6311], Lu Xing [0712 5281], Lai Hanming [6351 3352 0682], Liu Yinghua [0491 5391 5478]

ORG: Beijing Institute of Dissemination and Application of Electronics Technology

TITLE: "An Experimental Computer Network System"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 2, Apr 80 pp 1-11, inside back cover

ABSTRACT: The hardware system for the network described was developed by March 1979. Preliminary software development took about a half year. It was found that domestically produced equipment was suitable for integration into such a system. The main computer was a DJS-6, using a DJS-130 as the front-end processor. Foreign P6060's were used as terminal processors, and a P6040 and two TC-485's as general-use terminals. The network, of a star type, was implemented in the Beijing area with three terminals, using speeds of 30-1200 Baud over telephone lines. Graphs show a number of characteristics of the lines used, in addition to the effect of group length on transmission characteristics. The operation of the main computer and front end processor is described, the organization of the interfacing is diagrammed, and flow charts of the main procedures are provided. Photographs of the DJS-6, DJS-130 and P6060 and P6040 are provided inside the back cover.

AUTHOR: Zhu Jisheng [2612 4949 3932]

ORG: Beijing No 3 Computer Plant

TITLE: "THE DJS-140 Computer and Its Software"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 2, Apr 80 pp 12-18, 29

ABSTRACT: The DJS-140 is a high-level machine in the 100 series. It has a word length of 16 bits, and 22 basic instructions, other basic instructions such as multiply and divide, floating point and 10 memory management and protection instructions. The CPU comes with an optional floating point unit and there is an optional memory management and protection unit. Four operating systems are available: SOS, XRTOS, RDOS and MRDOS, making possible the use of assembler, ALGOL-60, BASIC and FORTRAN IV and V. The machine may be used for real-time process control, scientific calculations, data processing, graphing and for multimachine systems and networks.

AUTHOR: Shen Xubang [2088 4872 2831]

ORG: Shaanxi Institute of Microcomputers

TITLE: "Language Oriented Microcomputer Research (Part II: Compiler Technique)"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 2, Apr 80 pp 19-29

ABSTRACT: Compiler procedures are discussed with emphasis on the PASCAL language. In the process of compiling a program, lexical and syntactical operations are to some extent interwoven rather than being rigidly separate. These two areas together are called program "explanation." Techniques for coding and memory allocation of variables and constants of different types are described, and the procedures for handling operations, expressions and statements are outlined. The special handling of statements such as IF... THEN...ELSE, REPEAT...UNTIL and WHILE...DO and of BEGIN and END statements is explained.

AUTHOR: ZHANG Gongzhong [1728 0361 1813]

ORG: Qinghua University

TITLE: "Structure of a Z-80 Microcomputer System (The CROMEMCO System-III)"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 2, Apr 80 pp 30-39, 49

ABSTRACT: The CROMEMCO System-III is one of the most powerful new microcomputers using the Z-80 microprocessor. Its configuration includes the "ZPU" central processor and assorted logic and control circuits, RAM in 16-Kbyte blocks up to 64Kbyte (or 512 Kbyte in multiuser systems), the S-100 bus, a twin universal asynchronous receiver-transmitter (TU-ART), and a four-floppy disk controller. A resident disk operating system is available. Available languages include FORTRAN III, 16K expanded BASIC, COBOL and Trace System Simulator.

AUTHOR: Liu Minglie [0491 2494 3525]

ORG: Shenyang Institute of Computer Technology, CAS

TITLE: "Approaches to the Design of Cache Memory in Medium Sized and Mini-Computers"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 2, Apr 80 pp 40-49

ABSTRACT: Cache memory is a small high speed memory into which frequently used information is written, thereby speeding up memory access. The major questions involved in its design are the size of the memory itself (ranging from 8 to 64 Kbyte in various IBM machines) the association method, the size of the individual blocks, the replacement algorithm and the write strategy. Graphs of the influence of these and other factors on the miss rate are presented. Four different approaches to cache memory design, as implemented in the VAX-11/780, PDP-11/70, PDP-11/60 and (partially) in the PDP-11/34 are analyzed and their suitability for machines of different sizes is discussed.

AUTHOR: Chen Shengfan [7115 0524 0416]

ORG: Institute of Computer Technology, CAS

TITLE: "The Connection Between Interrupt Systems and Operating Systems"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese No 2, Apr 80 pp 50-60

ABSTRACT: The interrupt system is an important part of hardware design; as the interrupt processing programs are part of the management program, which is the heart of the operating system, the hardware interrupt system is very important in the operating system. On the basis of description of the interrupt systems of several computers (IBM 370, Siemens 330, Siemens 4004, Siemens 7000) the author concludes that organization of interrupts into several strata in combination with a process control block (PCB) is an effective approach. He then proposes an improvement on this design, aimed at making it more efficient by the use of macro instructions.

AUTHOR: Jin Hufan [6855 5706 3058]

ORG: Shenyang Institute of Computation, CAS

TITLE: "Chinese Character Input Methods"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 2, Apr 80 pp 61-69

ABSTRACT: The main divisions of Chinese character input methods are: keyboard methods, "position" methods and form recognition methods. In the first class, there are complete keyboards, 625-key keyboards (with four pedal positions for each key) and 192-key keyboards. In addition, such methods as SINOTYPE, RAINPUT and SUPERWRITER involve sequential input based on types of strokes or pronunciation. The so-called "positional" methods do not use a keyboard input, but rather the input from a light pen, pantograph or similar mechanical, optical or electrical device. Optical character recognition methods entail a tradeoff between the amount of information and accuracy: if a character is scanned by means of a 48 x 48 grid, for example, accuracy is high but an unmanageable amount of information is produced. Smaller grids entail decreased accuracy. Other methods involve a four-level recognition process or a tree process of deciding between pairs. Work is also being done in handwritten character recognition and pronunciation recognition.

AUTHOR: Ren Bangying [0117 2821 5391]

ORG: Beijing Industrial College

TITLE: "A Single-Bit Microcomputer"

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 2, Apr 80 pp 70-73

ABSTRACT: The Motorola MC14500B microprocessor is a single-bit design. It contains an instruction store, instruction decoder control unit, operation components, result registers, data bus and the like, but the operation components, result registers and bus take only a single bit. Some examples of the use of this microprocessor's instruction set are provided. The machines are highly flexible and worthy of attention by Chinese computer scientists but they show up to disadvantage in large volume data processing and parallel processing.

AUTHOR: None

ORG: None

TITLE: None

SOURCE: Shenyang ZHONGXIAOXING JISUANJI [MINI-MICRO SYSTEMS] in Chinese
No 2, Apr 80 pp 74-79, 60, outside back cover

ABSTRACT: Some typical foreign mini and micro-computers are described in tables specifying memory capacity, programming languages, CPU cost, year of introduction and (in the case of microcomputers) certain technical data on the microprocessor). Separate tables deal with US, Japanese and European machines.

An advertisement for sale of the TRS-80 computer, distributed by the "Advanced Computer Technology Company" in Hong Kong, and by the New Electronic Computer Center, Zhongshan University, Guangdong, is on the outside back cover.

8480

CSO: 4009

AUTHOR: None

ORG: Designing Department, Shanghai Recorder Plant

TITLE: "Shanghai L-316 Cassette Type Magnetic Tape Recorder (Continued)"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 4, Apr 80 pp 3-4

ABSTRACT: This portion of the paper is devoted to explaining items to which users of the recorder must pay attention if the recorder is to give satisfactory performance. For example, the recorder is designed to be used with ferric oxide tapes only, and chromium dioxide or ferro-chromium tapes are not recommended. The recorder has an automatic shut-off device, but if the machine should stop in the middle of a recording process, the trouble most likely belongs to the magnetic tape. If the tape is not rolled evenly inside the cassette or if the tape has serious problem of static electricity, the recorder will shut off automatically. Brief tables are given to describe properties and circuits of the recorder to serve as a trouble-shooting guide for the users.

AUTHOR: None

ORG: Beijing Electronic Parts Supply Station; Chashi Hutong Elementary School, Chongwen District, Beijing

TITLE: "Experimental 6804 Silicon-Germanium Superheterodyne Receiver"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 4, Apr 80 pp 6-7

ABSTRACT: This paper is prefaced by a note from the journal's editorial department stating that for the convenience of amateur electronic hobbyists the journal publishes this paper and will publish similar ones in the future. Addresses of the distribution agents are included and the price for all required parts to make the receiver is 6 yuan plus 60 cents for mailing. All letters of inquiry are directed to the distributors and the journal will not handle any transfers of money or request. Circuit properties and method of making the radio receiver are explained in the paper.

AUTHOR: (1) XIAO Hexiang [5135 0735 4382]
(2)-(3) None

ORG: (1) None; (2) Designing Department, Tianjin Electronic Instrument Plant;
(3) None

TITLE: "Brief News of Electronics"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 4, Apr 80 p 9

ABSTRACT: Three items are included in the paper: (1) Several cassette magnetic tape recorders are introduced, including Shanghai L 316, Kuihua HL-103, Xiongmao L-02, Zhongsheng HL-1, Yunque HL L-1, Meihua M-106, Haiou L-101, etc. The gear-drive devices of all these recorders are imported from foreign countries. (2) B07 super-low frequency phase-angle meter made by Tianjin Electronic Instrument Plant is introduced. In the range of frequency of 0.001 - 3 Hz the error is not greater than 0.05° when the amplitude of the signal being tested is 1 - 100 V, and is not greater than 0.02° if the amplitude of the signal tested is 50mV - 1 V. (3) QJZ-2 Milking Machine With Automatic Control is successfully made by Beijing Municipal Institute of Agricultural Machinery. Aside from the milk cups, the entire squeezing process is automated. The machine can complete squeezing each cow in 4-7 minutes, and additional squeezing by hand is not required. The machine won a second prize in 1980 in Beijing.

AUTHOR: ZHANG Jiamou [1728 1367 6180]

ORG: None

TITLE: "Decoder Circuit of Color Television Receiver"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 4, Apr 80 pp 11-13

ABSTRACT: In Nos 7, 8, 9 issues of the journal in 1978, the basic theory of encoding and decoding process of color television signals were clarified. On the basis of that paper, this paper continues to relate the theory of the concrete circuit of the decoder of color television receivers. In separate sections, the paper proceeds to discuss the pass filter amplifier, the time delay separating comb-like filter, the synchronous detector. A complete circuit diagram of a typical color television decoder is given. This paper is to be continued.

AUTHOR: HU Shaoying [5170 1421 5391]

ORG: None

TITLE: "Making 16 and 19-Inch Black and White Television Sets: The Low Voltage Power Supply Scanning Circuit"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 4, Apr 80 pp 16-19

ABSTRACT: This paper is divided into 2 parts. In the first part, there is a brief introduction of the low voltage power supply scanning circuit, including detailed circuit diagrams. The second part describes the process of making it. This paper is to be continued.

AUTHOR: None

ORG: None

TITLE: "Front, Back, Inside Front and Inside Back Covers"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 4, Apr 80 front, inside front, back, inside back covers

ABSTRACT: The front cover of this issue is a photo depicting 7 types of radio and cassette recorder combination, all made in China. The inside front cover is the continuation of a table describing the major properties of some transistors used in foreign television sets. The back cover is an advertisement by Shanghai Radio Twenty-Nine Plant, which specializes in producing silicon NPN/PNP, germanium PNP transistors that are suitable for television sets, recorders, enlargers, and other electronic instruments. There is a brief listing of some transistors suitable for color T.V. and others suitable for black and white sets. The inside back cover includes 3 advertisements. One is by Taiyuan Radio Instrument Plant, calling attention to its product, the SQ-23 dual track internal trigger oscillograph, as well as a list of other products. The other 2 items announces the publication of 5 books and journals in the field of radio and telecommunications.

AUTHOR: LIU Cheng [0491 6134]
ZHOU Jixin [0719 4949 2450]

ORG: None

TITLE: "Dual Picture Television"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 5, May 80 pp 1-2

ABSTRACT: There are 2 types of multi-image television receivers. One is dual picture television, and the other is called dual screen television. In the former, programs of 2 television broadcasting stations are in view on one fluorescent screen simultaneously. Generally one program is seen in large picture and color while the second program is seen in small picture on the corner or the border and may be either black and white or in color. In English, this is called PIP i.e. Picture in Picture. The latter is a television set having 2 fluorescent screens, one large and one small and one color picture tube and one black and white picture tube. In English this called POP, i.e. Picture out Picture. The first to make PIP television is West Germany. In separate sections, the basic theory and method of storing signals in PIP are briefly explained. This paper is to be continued.

AUTHOR: ZHANG Jiamou [1728 1367 6180]

ORG: None

TITLE: "Decoder Circuit of Color Television Receiver (Continued)"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 5, May 80 pp 3-6

ABSTRACT: This portion of the paper continues the discussion on the synchronous detector. Then, in separate sections, the paper proceeds to discuss the matrix circuit, the accessory carrier frequency oscillator, the lock phase circuit, the automatic color control circuit, and the Y signal amplifier. The overall analysis of the function and component parts of the color television decoder circuit is completed with this paper.

AUTHOR: WU Huixi [7279 3790 0823]

ORIG: None

TITLE: "Television Sound Intermediate Frequency Exchanger"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 5, May 80 pp 7-8

ABSTRACT: When television sets made in foreign countries are used in China, they often must be changed first. A paper on "Changing the Frequency of Imported Television Sets" had appeared previously in the journal. In this paper, a method of using an exchanger to change the intermediate frequency of the sound of imported television sets is introduced. The theory, the needed parts, and the method of tuning and adjusting are discussed. In the final section, an example of using this method to convert a Japanese-made GTP-205 color television set's sound frequency is described.

AUTHOR: HU Shaoying [5170 1421 5391]

ORIG: None

TITLE: "Making 16 and 19-Inch Black and White Television Sets: The Low Voltage Power Supply Scanning Circuit (Continued)"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 5, May 80 pp 8-10

ABSTRACT: This portion continues the discussion with sections on the selection of major components and tuning methods, which include adjusting the line scanning and adjusting the field scanning. This portion completes the paper.

AUTHOR: Tu Zhongyuan [1458 1813 3293]

ORG: None

TITLE: "Automatic Arbitration Military Chess Game"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 5, May 80 pp 28-29

ABSTRACT: Military chess is an interesting game enjoyed by many people. It is especially liked by the young. The game requires a referee or arbiter, however. This paper describes a set designed by the author and colleagues that has an arbitration box to take the place of the referee. The circuit of the box and the method of making the wooden chessmen having different electrical potential are described. The box has 2 indicator bulbs, which light up to show which side wins in a move. If both chessmen lose such as a general encounters a bomb, neither bulb will light up, and the box will give a noise to indicate both chessmen are eliminated.

AUTHOR: None

ORG: None

TITLE: "Front, Back, Inside Front, and Inside Back Covers"

SOURCE: Beijing WUXIANDIAN [RADIO] in Chinese No 5, May 80 front, inside front, back, inside back covers

ABSTRACT: The front cover is a drawing of the 8 digit microprocessor single chip CPU X6080 made in 1979 by Shanghai Component Fifth Plant. It is a large scale integrated circuit containing more than 5000 MOS transistors, with arithmetic logic unit, command storage device, and control circuit, etc. The drawing also includes the trademark of the plant. The inside front cover contains the continuation of a table listing the major properties of transistors used in some foreign television sets. The back cover is an advertisement of Shanghai Component Fifth Plant, with its registered trademark. The inside back cover lists 5 types of products of Shanghai Component Fifth Plant: (1) large scale integrated circuits used in microcomputers; (2) digital integrated circuits used in industrial automatic controls and digital meters and communications equipment; (3) analog integrated circuits used in various analogue computation instruments; (4) microwave transistor triodes; (5) medium power transistors; (6) special components.

6168

CSO: 4009

38

AUTHOR: WANG Xiaofeng [3076 0876 7364]

ORGL: Yichang Institute of Geology and Mineral Resources, Chinese Academy of Geological Sciences

TITLE: "The Ordovician System in China"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY] in Chinese Vol 54 No 1, Feb 80 pp 1-8

TEXT OF ENGLISH ABSTRACT: Relying on abundant material accumulated by a host of geologists in China for over a decade, this paper deals mainly with the following aspects:

1. The Chinese Ordovician system, characterized by its wide distribution, a fairly complete and perfect set of stratigraphic types and rich fossil content, plays an important part in the cosmopolitan classification and correlation of the Ordovician, as well as in the research on the origin and evolution of the Ordovician biogeographic provinces.
2. Taking into account lithofacial and biofacial characters and also the various types of the Ordovician for the whole world, the Chinese Ordovician is divisible into 10 biostratigraphical regions, which may be grouped into

[Continuation of DIZHI XUEBAO Vol 54 No 1, Feb 80 pp 1-8]

the North China, the Yangtze and the Southeastern types. There is a striking resemblance between North American-Pacific Province and the North China type, also between the European-North Atlantic Province and Southeastern (SE) type, while the Yangtze type with well developed regional faunas represents a mixture of the above two types. Obviously, the transitional characters of the Yangtze type Ordovician are especially important in explaining the cosmopolitan subdivision and correlation of the Ordovician.

3. Synthesizing the existing four main schemes of the Chinese Ordovician subdivision, on the basis of Huanghuachang section of Yichang which will be selected as a stratotype, in association with the Ordovician in the Yangtze Gorges, the Chinese Ordovician system is subdivided into 2 series including 8 stages and 24 zones. These are correlated with corresponding units of China and elsewhere in the world.

4. It is suggested that the Ordovician-Silurian boundary is best drawn at the top of the Kuanyinchiao formation with the Hirnantia-Kinnella faunas of Wufengian stage and that the Cambrian-Ordovician boundary is placed at the base of the Onychopyge-Leiostegium (Alloleiostegium) zone of the Yeli formation in North China, but in South China this boundary is placed at the base of Dictyonema sociale or Hysterolenus zone, corresponding to that between the Hirtodus hirsutus-Drepanodus simplex assemblage at the base of the Ordovician and the Proconodontus notchpeakensis-Oncotodus datsonensis assemblage at the

top of the Cambrian in the Yangtze Gorges. According to lithological characters and chiefly in consideration of the evolution of the faunas, the Upper-Lower Ordovician boundary is drawn either at the base of the Miaopoan Glyptograptus teretiusculus zone or at the top of the Kuniutuanian Pterograptus elegans zone.

AUTHOR: GAO Ruiqi [7559 3843 4388]

ORG: Institute of Scientific Research and Design, Daqing Oil-Field

TITLE: "Characteristics of the Continental Cretaceous in the Songliao Basin"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY] in Chinese Vol 54 No 1, Feb 80 pp 9-22

TEXT OF ENGLISH ABSTRACT: By integrating the abundant data concerned with paleontology, geochemistry, lithology and regional geology obtained from exploring and developing the Daqing oil-field, this article describes the characteristics of the continental Cretaceous in the Songliao Basin. It also discusses the criteria for recognizing lacustrine rocks.

During Cretaceous, the ancient Songliao Lake was very extensive. Through the very long geological time, the lake was populated with various taxa of organisms which became differentiated as time went on. The alternation of humid and arid climate resulted in a complex change of chemical conditions of lacustrine water. Judging by data of fossils and the geochemistry of rocks and crude oil, the Cretaceous deposits in the Songliao Basin reflect an environment of a large fresh lake. Such fresh water deposits are different from

either the marine deposits or from the deposits of small- to moderate-sized interior lakes. In short, the Songliao Basin was favorable to the formation and preservation of a large quantity of petroleum.

AUTHOR: WU Ping [0702 5493]
YANG Zhenqiang [2799 2182 1730]

ORG: None

TITLE: "Stratigraphic Correlation of Cretaceous to Paleogene Sediments and the Characteristics of Tectonic Development in South-Central China"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY]
in Chinese Vol 54 No 1, Feb 80 pp 24-33

TEXT OF ENGLISH ABSTRACT: By combining sedimentary rhythms with paleontology, Cretaceous-Paleogene sequence of south-central China can be divided into four second-order sedimentary rhythms: the Early Cretaceous, the early and middle stages of the Late Cretaceous, the Late stage of the Late Cretaceous to the Early Eocene, and the Middle Eocene to Oligocene, which are correlatable with those in adjacent areas of southwest and east China.

A sedimentary rhythm is the reliable record of a tectonic movement of the earth's crust and, therefore, each of these second-order sedimentary rhythms represents an episode of crustal movement. The three episodes of tectonic movements, which occurred at the end of Jurassic, early Cretaceous and at the end of late Cretaceous, are represented by the NE or NNE Neocathaysian

structural zones controlling the origination and development of the red bed basins and were caused by the pushing (and compressive) forces coming from the southwestern Circum-Pacific region. The movement of the fourth episode which took place in the Middle Eocene brought about the uplift of E-W tectonic zones in southwest China and the Nanling region, resulting in the infilling of several large and medium-sized basins controlled by E-W tectonic zones.

AUTHOR: FENG Yimin [7458 4135 3046]
ZHU Baoqing [2612 1405 3237]

ORG: Both of the Xi'an Institute of Geological and Mineral Resources,
Chinese Academy of Geological Sciences

TITLE: "Melanges and Tectonic Development of the West Qinling Mountains"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY]
in Chinese Vol 54 No 1, Feb 80 pp 34-43

TEXT OF ENGLISH ABSTRACT: The melanges of the West Qinling Mountains occur discontinuously for about 800 km along the southern flank of a major deep fault zone at the northern margins of the Indosinian fold belt. According to their characteristics, the melanges may be classified into three types: (1) exotic block type, (2) conglomerate type (olistostrome), and (3) reformed melange.

There is no doubt that melange is one of the main indications of plate tectonics. In this paper the authors, based upon recognition of the melanges of West Qinling, propose their new explanation of the tectonic development in West Qinling in a perspective of plate tectonics. Three stages of tectonic development can be distinguished, i.e., (1) Late Paleozoic--Early and Middle

Triassic, (2) Late Triassic, and (3) Jurassic-Recent. The first is the development stage of the ancient sea of West Qinling, the second is the stage when the West Qinling Indosinian fold belt was further compressed and faulted and small intermediate-acidic intrusive bodies and intermediate-acidic volcanic basins came into being under the influence of the motion of the Songpan-Ganzi ancient plate to its south, and the third is the stage when tensional rupture was produced in the fold belt. The tensional activity of this stage was evidently related to the near-east-west compression of the Pacific plate acting upon the Chinese continent since the Cenozoic.

The cause for the Qinling Mountain system to become the demarcation line between south and north China does not lie in the existence of the earth's axis or the geosyncline in the past, but lies in that for long geologic ages Qinling had been a wide ancient sea which had separated south China from north China.

AUTHOR: ZENG Yishan [2582 6318 0810]

ORG: Department of Geology, Beijing University

TITLE: "Research on Some Aspects of the Transportation Form of Iron"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY] in Chinese Vol 54 No 1, Feb 80 pp 44-51

TEXT OF ENGLISH ABSTRACT: In order to explain the behavior of iron in the alkaline hydrothermal solution, the equilibrium constants of iron-hydroxyl complex formation reactions at temperatures of 100°C, 200°C and 300°C have been calculated by the approximate method. On the grounds of these calculated results, the solubility of Fe_2O_3 in the hydrothermal solution and the distribution of the iron-hydroxyl complex species and their pH-Eh stability conditions have been estimated, and the correlation between the Fe(III)-hydroxyl complex and Fe(II)-chloride complex in chloride-bearing hydrothermal solution has also been discussed. From the results we conclude that the solubility of Fe_2O_3 in the alkaline hydrothermal solution has geological significance and iron-hydroxyl complex probably plays quite an important role in the transportation of iron.

AUTHOR: HONG Dawei [3163 1129 5898]
CHEN Xuezhong [7115 1331 2973]
LI Chunjie [2621 4783 2638]
YU Shimei [0151 1193 5019]

ORG: None

TITLE: "Typomorphic Characteristics of the Rock-Forming Minerals of the Juchow-Dayang Granite and the Conditions of Their Formation"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY]
in Chinese Vol 54 No 1, Feb 80 pp 52-69

TEXT OF ENGLISH ABSTRACT: The Juchow-Dayang granite is situated in the Lung-yen-Changping synclinorium which forms the central part of the late Paleozoic Yunnan (Fujian)-Meixien (Guangdong) syncline. It belongs to the early Yenshanian phase with a radiometric age of 158-164 m.y. The entire massif may distinctively be divided into two facies: orthoclase-granite and microcline-granite facies. In the former, the degree of order of the K-feldspars ranges from 0.23 to 0.49, the $Fe/(Fe + Mg)$ of the biotites is 0.52, and the K/Rb of the bulk rock ranges from 145 to 173; while in the latter, the degree of order of the K-feldspars is 0.71-0.91, the $Fe/(Fe + Mg)$ of the biotites 0.87, and the K/Rb of bulk rock, 60-119. Judging by the typomorphic characteristics of

[Continuation of DIZHI XUEBAO Vol 54 No 1, Feb 80 pp 52-69]

the rock-forming minerals as well as the geochemical properties of trace elements, it is shown that during the formation of the granite, the orthoclase-granite facies had been subjected to deeper level emplacement, higher temperature, higher oxygen fugacity and lower H_2O fugacity than the microcline-granite facies had. The graduation of the orthoclase-granite facies into the microcline-granite facies represents the developmental trend of the magma.

AUTHOR: ZHANG Ronghua [1728 2837 5478]

ORG: None

TITLE: "On the Mechanism of Geochemical Zoning of the Altered Country Rock of the Porphyrite Iron Ore in the Middle-Lower Changjiang Valley"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA; JOURNAL OF GEOLOGY] in Chinese Vol 54 No 1, Feb 80 pp 70-84

TEXT OF ENGLISH ABSTRACT: Based on the zoning of mineral equilibrium, the relationship of mineral phases and chemical components of altered rocks, and the characteristics and variation of isomorphism and polymorphism as stated in more detail in a previous paper ["On Geochemical Zoning of the Altered Country Rock of the Porphyrite Iron Ore in the Middle-Lower Changjiang Valley," ACTA GEOLOGICA SINICA, Vol 53 No 1], the following conclusions are preliminarily made in the present paper.

There are two main processes, fluid flow and diffusion, which bring the ore-forming solution into the country rocks. As solution flows forward and, at the same time reacts with the country rocks, its composition varies consistently from the solution sources outward and spans the whole period of metasomatic column. Plenty of facts reveal the existence, during the whole process,

[Continuation of DIZHI XUEBAO Vol 54 No 1, Feb 80 pp 70-84]

of a temperature gradient and a concentration gradient. Hence, the theory of irreversible thermodynamics may be applied here to interpret the mechanism of hydrothermal alteration.

In addition, the fugacity of SO_3 , O_2 , H_2O , CO_2 and P_2O_5 , etc., appears to play an important role in the formation of alteration zoning. The increase of PSO_3 is favorable to the transformation of the melano-alteration into the leuco-alteration.

9717

CSO: 4020

Geology

AUTHOR: LUO Hulin [5012 1920 7792]
JIANG Zhiwen [5592 1807 2429]
XU Zhongjiu [1776 6850 0046]
SONG Xueliang [1345 1331 5328]
XUE Xiaofeng [5641 0876 1496]

ORG: All of Yunnan Institute of Geological Sciences

TITLE: "On the Sinian-Cambrian Boundary of Meishucun and Wangjiawan, Jinning County, Yunnan"*

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA] in Chinese Vol 54 No 2, May 80 pp 95-110

TEXT OF ENGLISH ABSTRACT: This paper deals with the Sinian-Cambrian boundary reference sections and reference points of Meishucun and Wangjiawan, Jinning County, Yunnan. The stratigraphic section of Meishucun is characterized by a continuous marine sequence of mono-phase, fair outcrops and abundant fossils. It is easily accessible, well preserved and was studied long ago. It may serve as an ideal Sinian-Cambrian boundary type section and boundary point. It is the section on which the Meishucun stage is established, too. The Wangjiawan section is also a comparatively good boundary type reference section.

[Continuation of DIZHI XUEBAO Vol 54 No 2, May 80 pp 95-110]

and reference point. The phosphate bed in this section is thick and forms a continuous sequence with the underlying Dengying formation.

The Meishucun stage, from bottom to top, is divided into Xiaowaitoushan, Zhongyicun and Badaowan members. The first one belongs to Dengying formation while the latter two members may have combined to form the Meishucun formation. The Meishucun stage consists of three fossil assemblages and six sub-assemblages. The Anabarites primitivus sub-assemblage in the Xiaowaitoushan member is the oldest of the shelly fossils in China. The Badaowan member, as judged from the shelly fossils and micro-paleofloristic assemblage, is quite similar to the Zhongyicun member, but differs greatly from the Qiongzhusi formation characterized by its comparatively more advanced trilobites and paleostracods. Therefore, the Badaowan member should be included in the Meishucun stage. So far as is known, the genus Parabadiella occurring at the bottom of the Qiongzhusi formation in the stratigraphic section of Meishucun is the oldest trilobite in China.

* Also taking part in the field work were: CAO Renguan [2580 0088 7070], WU Xiche [2976 1585 1796], GE Hongru [2047 1347 0320], LIANG Qizhong [2733 LUO Wancheng [4382 8001 2052], ZHANG Shishan [1728 0013 1472], LONG Yunmin

[Continuation of DIZHI XUEBAO Vol 54 No 2, May 80 pp 95-110]

[7893 6663 3046], YIN Jicheng [3009 4949 2052], HE Tinggui [0149 1694 6311], DING Lianfang [0002 5571 5364], SHI He [4258 0735], YANG Xianhe [2799 2554 0735] and TIAN Chuanrong [3944 0278 2837].

AUTHOR: JIANG Zhiwen [5592 1807 2429]

ORG: Yunnan Institute of Geological Sciences

TITLE: "Monoplacophorans and Gastropods Fauna of the Meishucun Stage from the Meishucun Section, Yunnan"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA] in Chinese Vol 54 No 2, May 80 pp 112-121

TEXT OF ENGLISH ABSTRACT: The earliest Cambrian Meishucun stage contains plenty of small shelly fossils dominated by monoplacophorans and gastropods. In this paper a total of 20 species are described and illustrated from the Meishucun section of Yunnan. They belong to 2 classes, 2 orders, 2 families, 17 genera (14 new ones) and 3 new forms.

Four assemblages of the monoplacophorans and gastropods may be recognized on the basis of their stratigraphic distribution and evolutionary trend, from bottom to top: 1. Cassidina assemblage, 2. Yunnanospira-Planaspira assemblage, 3. Rostroconus-Crestoconus assemblage, and 4. Palaeacmaea assemblage. These assemblages reflect the evolutionary trend of this fauna--from lower to higher grade and from simple to complicated structure.

[Continuation of DIZHI XUEBAO Vol 54 No 2, May 80 pp 112-121]

This paper reports the monoplacophoran muscle scar and discusses the origin and evolution of some molluscan groups, as well as the difference between monoplacophorans and gastropods. Three new concepts are offered: the brachiopod-like Monoplacophora, the bivalve-like Monoplacophora, and the rostroconchia-like Monoplacophora. The Cassidina, the oldest monoplacophoran discovered in the Xiaowaitoushan member of the Meishucun stage, is considered to be the ancestor of Brachiopoda, Gastropoda, Rostroconchia, and Bivalvia.

Correlation of the present fauna with those discovered both at home and abroad is also discussed.

AUTHOR: XU Shutong [1776 2885 2717]
LU Jinyuan [7120 6975 0337]
ZHANG Weiming [1728 4850 2494]
CHEN Guanbao [7115 0385 1405]

ORG: All of the Institute of Geology, Anhui Geological Bureau

TITLE: "A Trial Structural Analysis of the Iron-Bearing Metamorphic Rock Series from Huoqiu Group of Precambrian Time, Madian, Western Anhui"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA] in Chinese Vol 54 No 2, May 80 pp 124-133

TEXT OF ENGLISH ABSTRACT: The iron-bearing metamorphic rock series from Huoqiu Group of Precambrian time is covered by a very thick sequence of younger deposits ranging in time from Sinian to Quaternary and has no outcrops on the surface over the whole area under investigation. So there exist numerous great difficulties in the structural studies. Based on the salient features found in the cores and the principle of fabric transposition, we have subdivided the metamorphic rock series into the following three lithological members: 1) the Marble Member, 2) the Schist Member, and 3) the Gneiss Member. In addition, we have also recognized three phases of deformation of the metamorphics using the method of analysis on fabric orientations in cores: the

first phase (F_1) is represented by isoclinal closed folds controlling the configuration of ore bodies; the second phase (F_2) is characterized by open folds with their axes being perpendicular to those of (F_1), thus making the ore beds undulate gently along the axis of (F_1); and the third phase (F_3) is recognized from the asymmetric closed folds approximately coaxial with (F_1) on a large scale and containing a group of ore bodies in its synforms. The graphic features of the superposition of the three phases of deformation show a double girdle of λ_{s_0}' .

AUTHOR: MA Zhesheng [7456 0811 3932]
QIAN Rongyao [6929 2837 5069]
PENG Zhizhong [1756 1807 1813]

ORG: All of the X-Ray Laboratory of Wuhan College of Geology, Laboratory of Yunnan Dongchuan Mining Industry Bureau

TITLE: "Clinotyrolite--A New Mineral of the Hydrous Copper Arsenate Discovered in Dongchuan, Yunnan"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA] in Chinese Vol 54 No 2, May 80 pp 134-143

TEXT OF ENGLISH ABSTRACT: Clinotyrolite, a new mineral of the hydrous copper arsenate, is widespread in the oxidized zone of the Dongchuan copper mine, Yunnan Province, China.

Flaky crystals are parallel to (001) and extend along [100]. The mineral is emerald green in color, pearly or silky in luster, with radiated and foliated aggregates. Its specific gravity is 3.22. The optical data of Clinotyrolite are as follows: $n_g = 1.6945$, $n_m = 1.6862$, $n_p = 1.6665$. $(-)$ $2v = 65^\circ.66'$. The chemical formula of the crystal is $Cu_9Ca_2[(As, S)O_4]_4(OH, O)_{10} \cdot 10H_2O$.

[Continuation of DIZHI XUEBAO Vol 54 No 2, May 80 pp 134-143]

Space group: Pa or $P2/a$, the parameters of the monoclinic cell: $a = 10.513 \text{ \AA}$, $b = 5.56 \text{ \AA}$, $c = 27.61 \text{ \AA}$, $\beta = 94^\circ 0'$. $Z = 2$.

The new mineral is similar to tyrolite in composition, but it differs from the latter in crystallographic parameters and optical properties. It is named clinotyrolite because it belongs to the monoclinic system.

Since both ordinary orthorhombic tyrolite and clinotyrolite exist in Dongchuan, they are of polymorphous minerals. The crystal structure of clinotyrolite should be determined in detail.

AUTHOR: CUI Wenyuan [1508 2429 0337]
ZHENG Shuhui [6774 3219 5610]

ORG: Both of the Department of Geology, Beijing University

TITLE: "Oxygen Isotope Preliminary Studies of the Regional Metamorphic Complex in the Zunhua-Qianan-Luanxian Area, East Hebei"

SOURCE: Beijing DIZHI XUEBAO [ACTA GEOLOGICA SINICA] in Chinese Vol 54 No 2, May 80 pp 144-153

TEXT OF ENGLISH ABSTRACT: The present paper studies the oxygen isotope of some mineral assemblages from the Presinian metamorphic complex in the Zunhua-Qianan-Luanxian area, east Hebei, with discussion of related metamorphic temperature, metamorphic facies and the genesis of rich iron ores. The Presinian rocks exposed in this area are of Qianxi group (Sangan group) and Dantazi group, which are widely distributed. The metamorphic grade increases northward, ranging from rocks of the green-schist to epidote-amphibolite facies in the south, through those of the epidote-amphibolite to amphibolite facies, to those of the granulite facies in the north. The dominant types of the granulite facies are gneisses, hypersthene-plagioclase-granulite, plagioclase-amphibolite (pyroxenite) and itabirite, and the others are biotite-granulite*

and which characterizes the granulite-amphibolite.

The formation temperatures of various metamorphic facies has been determined on the basis of the difference in δO^{18} values between the quartz and magnetite mineral pairs. The formation temperature for the granulite facies is 692-562°C, that for the epidote-amphibolite to amphibolite facies is 540-515°C, and that for the green-schist to epidote-amphibolite facies is 385-315°C. That the value for the granulite facies is lower than that usually accepted may be explained by the retrogressive metamorphic effects suffered by the rocks concerned. The temperatures of the other metamorphic facies are, however, just the same as that determined by other methods.

Looking from the data of oxygen isotope analysis it appears that the δO^{18} values of quartz tend to decrease distinctly while those of the magnetite and monomineral tend to increase slightly as the metamorphic grade increases in the series.

The δO^{18} values of quartz and magnetite in migmatite formed by anatexis decrease approximately in comparison with those of the same minerals in un-migmatized country rocks, while the migmatization in which replacement pyroclastic and the action of thermal fluid tend to decrease the values δO^{18} .

and magnetite characterizes.

The granulite facies gneisses of Chang Shui and Xiaolonggong in 1972 for rocks corresponding to the same granulite of Scotland and leucite of Shandao rocks. These rocks in the English text of their paper entitled "The First Stage of Subduction and Metamorphism of Gneiss" which appeared in the 1973 volume of JOURNAL OF GEOL. RESEARCH, published in August, 1972, in Beijing, China.

AUTHORS: LIU MIAO-AN [AUTH. NO. 7118]
LIU JIE-CHANG [AUTH. NO. 1397 0341]

ORIG.: JOURNAL OF Geological Bureau of Geology

TITLE: "The tectonic Characteristics and the Ore-forming Process of the Hydrothermal Uranium Ore Deposit in Nanling Granites"

JOURNAL: JINGJI DIZHI XUEBAO [ACTA GEOLOGICA SINICA] in Chinese Vol. 34 No. 2, May 80 pp. 154-166

TEXT OF ENGLISH ABSTRACT: Granites extensively distributed in the Nanling region are of various ages, namely Caledonian, Hercynian and Yenshanian. Some of the intrusives are composed of granites which belong to different ages. The Yenshanian granites (197-115 x 10⁶ years old) enriched in uranium show post-magmatic degree of differentiation, and their uranium content gradually increases from the older ones to the younger, until finally in the latest fine-grained binary granite the uranium content is six times higher than that in normal granite.

The ore structure is situated in the central part of the E-W complex structural zone of Nanling, at the intersection of three structural systems: the E-W, NW and the NNE-trending structural systems. Uranium mineralization is

[Continuation of DIZHI XUEBAO Vol. 34 No. 2, May 80 pp. 154-166]

controlled by the late Mesozoic fractural structures, and most of the industrial ore bodies occur in NW shear-tensile fault zones.

The uranium mineralization is controlled by the fault zones. The central part of the mineral zone consists of pitchblende-bearing hematized and silicified rocks, mainly composed of silicified cataclastic rocks, post-ore faulting breccia, hematized veins and siliceous breccia, with alteration zones principally composed of hematite. Most of the ore bodies are veins in which the principal uranium mineral is pitchblende, the principal associated metallic minerals are hematite and pyrite, while the principal gangue minerals are quartz and fluorite. With vein alteration related to uranium mineralization includes hematization and sericitization.

The ore-forming process is genetically associated with the magmatic activity of the Yenshanian granites. As a result of differentiation and evolution, uranium was enriched in the magma at late stage and brought into the hydrothermal solution (magma) by the volatiles. In the form of uranic-silicate complex, uranium was transported in the hydrothermal solution and travelled upward along the fault zones.

[Continuation of RICH] RICHARD Vol. 36 No. 3, May 80 pp. 156-166]

When the change in 10^6 from 10^4 , pitchblende was precipitated. The formation of pitchblende-quartz hydrothermal deposit was accompanied by hematitization, pyritization, carbonitization and intense silicification.

VP17

CODE 5000

Accession No. 0712 3516]

Unit: Institute of Geography, Chinese Academy of Sciences

Title: "The Relationships between the Recessions or Advances of Glaciers and the Climatic as well as Oceanic Conditions"

Author: HAIYANG YU HUIZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 95-97

TEXT IN ENGLISH ABSTRACT: In general it is not arduous to understand the reasons that the glaciers retreat or advance during the same period according to the climatic fluctuations, but it is not easy to perceive why the glaciers advance on one slope of a mountain range and those of another side have already retreated in the same time interval as narrated by John H. Mercer in GEOGRAPHIC MAGAZINE, Vol 55 pp 390-411. The subject of his paper is "Glacier Variations in Southern Patagonia," in which he conceived some ways to study such landscape, such as pollen-pollen dating of suspected late-glacial and postglacial end moraines, which are needed for glaciers of various types and different environments. More studies also need to be made of plant colonization, particularly tree-ring-dating, after glacier recession in different climatic environments,

[Copy a part of HAIYANG YU HUIZHAO Vol 11 No 2, Apr 80 pp 95-97]

Other material photographs, etc.

One should try to use the climatic and oceanic knowledge to explain the differences of glaciers on different sides of mountain ranges, e.g., the western slope of the Andes in South America is the so-called luff side (German Luv side), i.e., the slope against wind all year round, especially in winter, but the eastern side is sheltered from Pacific moisture laden air. Moreover, the mean temperature of Chilean territory is always about 5°C or more lower than that of Argentine Patagonia either in winter or summer.

The ocean currents on both sides of South America circulate, roughly speaking, in accord with wind system above the oceans. For example, the Peru Current flows from south to north along the Chilean coast, and sends the cold water and cold air on the shore, so the western slope of height more than 5000 meters is favorable for glacier development. The Brazil Current from the equator flows southward along the South American shore, where it shows up as a tongue of warm and high temperature, so the Peru Current has no effect upon the reproduction of glaciers on the eastern slope of the Andes Mountains; this is the lee side of the winter precipitation-bearing air current, therefore South Patagonia is a rather dry area, particularly in the winter season.

AUTHOR: FANG Guohong [2455 0948 3163]

ORG: Institute of Oceanology, Chinese Academy of Sciences

TITLE: "Nonlinear Effects of Tidal Friction (I)"*

SOURCE: Beijing HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 98-108

TEXT OF ENGLISH ABSTRACT: The nonlinear interactions of the tidal waves propagating in an infinite homogeneous shallow canal are analyzed. The exact expressions of the coefficients of the Fourier development of $|u|u$ are presented when u contains two waves, and an approximate development is also given when u contains three or more waves. The approximate solutions for the primary and subordinate waves are given, and some conclusions are drawn: (1) Under the action of quadratic friction when the primary waves travel together, their amplitudes will decay at different rates. (2) The nonlinear friction causes the occurrence and growth of subordinate waves with frequencies $2\sigma_1 - \sigma_2$, $2\sigma_2 - \sigma_1$, $3\sigma_1$, $3\sigma_2$, ..., but the subordinate waves cannot develop unboundedly owing to friction. (3) Because of frictional nonlinearity, the practical nodal factors f used in analysis and prediction should differ from the theoretical ones: the practical variational ranges of the values f should usually be smaller than the theoretical ones. (4) The growth of the over tides

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 98-108]

excited by non-frictional nonlinearity is reduced by friction, and it is inferred that in a homogeneous canal, the shock wave cannot occur unless the condition $\sqrt{\frac{h}{g}} \frac{\sigma}{V} > 0.141$ is satisfied. (5) The friction enhances the wave with frequency $\sigma_1 - \sigma_2$ (i.e., M_{S_1} for M_2 and S_2 interaction) and make the daily mean sea level higher at spring tide than at neap tide.

The paper is separated into two parts: part (I) includes two sections and part (II) includes the other three sections. In Sec. 1, the governing equations (1.1) are written. The friction is considered as being partly nonlinear because of high correlation of the function $|u|u$ to the velocity u . The nonlinear part of the friction is characterized by the quantity E_f^2 [Eq. (1.2), where λ is independent of the time t and determined according to the condition $\partial E_f^2 / \partial \lambda = 0$], and the non-frictional nonlinearity is characterized by E_{nf}^2 [Eq. (1.3)]. The ratio of these two nonlinearities for a non-dissipative sinusoidal wave is given in Eq. (1.4). Sec. 2 contains the development of the function $|u|u$. In case of a single wave (2.1), the Fourier development of $|u|u$ (2.2) is well known, but for two waves (2.3), only the approximate expressions (2.5) for the components of the development with frequencies σ_1 and σ_2 were given by Jeffreys. The complete development takes the form of (2.22), where the exact expressions of the Fourier coefficients $C_{m,n}$ of the major components are listed

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 98-108]

In Table 1, Table 2 gives the expansions of $C_{m,n}$ in the form of series with respect to ϵ , and the numerical values of $C_{m,n}$ are specified in Table 3. When third order waves (2.23) are taken into account, the approximate development of η is shown in Eq. (2.27).

— Professor MAO Hanli [3029 3352 4409] gave encouragement and support for the present study.

Financial No 529 From the Institute of Oceanology, Chinese Academy of Sciences.

Authors' addresses: [1127 4426 0001]
MAO, Shaochang [1769 1859 2490]
KAO, Yenchien [1769 3057 6591]
TAN, Chai [0670 5268 7787]
CHU, Yungshun [2071 0948 0581]

Address: All of the Department of Marine Chemistry, Shandong College of Oceanology.

THE ZINC HYDROXIDE COMPLEXES IN SEA WATER**

Authors: HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Volume 11, No 2, Apr 80 pp 109-114

ABSTRACT: The shift of potential (E_p) with zinc stripping current density is utilized to determine the zinc hydroxide complexes in sea water. At a constant salinity is 17.96‰, zinc concentration is 12 $\mu\text{g/L}$. According to the E_p vs pH values (5-9.5), three sections of straight lines are observed at pH 5.48 and 8.73. The slopes of the last two sections are 25.8 mV/pH respectively. It is evident there exist Zn(OH)^+ and Zn(OH)_2 in sea water. The apparent stability constants of $\log K_1$ and $\log \beta_2$ calculated are 10.1 and 17.0, which agree with the several published values. This proves

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 109-114]

that Zn^{++} and $Zn(OH)^+$ are the main species of zinc in sea water at pH range of about 8.0.

* Professor HE Chongben [6378 1504 2609] reviewed the present article and gave his valuable opinions. WANG Qingzhang [3769 1987 3864] also assisted.

AUTHOR: CHEN Guohua [7115 0948 5478]

ORG: Department of Chemistry, Shandong College of Oceanology

TITLE: "Determination of Conductivity Salinity of Standard Sea Water of China"

SOURCE: Beijing HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 115-120

TEXT OF ENGLISH ABSTRACT: This paper describes the determination of conductivity salinity of standard sea water of China. A comparison of conductivity salinity derived from the International Oceanographic Tables and chlorinity salinity derived from the expression $s^2 = 1.80655 C1\%$ is presented in this paper.

* The following helped with the present study: CUI Xianzhao [1508 0101 5297], WANG Qingzhang [3769 1987 3864], LIU Minguang [0491 2404 0542], LI Hongrui [2622 7701 3841], BO Yu [0130 3768], LIU Hongxi [0491 3163 3356], FANG Zongxi [2453 1350 3356] and DAI Jixun [2071 4949 0534].

AUTHOR: JIAO Huiming [6392 3562 1656]

UNIT: East China Sea Institute of Oceanology, Chinese Academy of Sciences

TITLE: "Geomorphic Features of Embayed Coast from Yamen to Moyang River"

SOURCE: Beijing HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 121-133

TEXT OF ENGLISH ABSTRACT: In the investigated area, the general coastal features have been controlled by the Mesozoic fracture systems. The X-type systems have divided the terrain into several blocks, and the vertical movements of the latter have resulted in positive landforms as well as negative ones. Along the NE-trending fractures, which are best developed here, extends first a series of granitic low mountains and then, landward of and parallel to the latter, another series of metamorphic ones with folds and faults, both forming the coastal range. The successive upheavals of the mountains have produced three levels of erosional surfaces at 500 m, 200 m and 120 m respectively, plus four steps of terraces at 80-60 m, 40 m, 20 m and 10-5 m respectively.

The general features of the coast were shaped in the period of Atlantic transgression. The emergence of the sea resulted in the ria-type of shore, with

[Continued in HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 121-133]

promontories alternating with the bays. Erosion formed a promontory and sand bars surrounding the bay. It was the neotectonic upliftings that during an uplift raised the abrasional platforms to 10-12 and 3 m respectively, and yet in lower runs of ancient sand bars between dried lagoons, the bars inclining toward the sea.

The sedimentary flow of suspended materials, originating from the mouth of the Yangtze River, travels westward along the coast all year round and represents the most important force shaping the coast of this section. For the last thousand years, a higher percentage of silt and mud supply has been accumulated and, pushed by flood tidal currents, transported to the bays. Mangroves and salt-tolerant plants have actively participated in the process of deposition. Muddy plains and mud flats have grown on the bay heads, especially since the 15th century when the plains might have extended seaward as much as 10 m a year. The bays will finally be filled up and the coast straightened not by erosion, but by deposition.

LI JIN Hongsheng [2431 7703 7160] did the illustrations for the present study.

AUTHOR: ZENG Chengkui [2582 0701 1145]
ZHOU Baicheng [0719 4102 2052]
PAN Zhongzheng [3382 1813 2973]

ORG: All of the Institute of Oceanology, Chinese Academy of Sciences

TITLE: "Comparative Photosynthetic Studies on Benthic Seaweeds. I. Photosynthetic Properties and Pigment Composition of Intertidal Green Algae"

SOURCE: Beijing HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 134-140

TEXT OF ENGLISH ABSTRACT: Twelve intertidal marine benthic green algae, including Ulva pertusa, U. linza, U. conglobata, Enteromorpha intestinalis, E. spiralis, Monostroma angicava, Bryopsis hypnoides, B. plumosa, Codium fragile, Cladophora sp., C. fasciculata and Ulothrix flacca were employed in the present studies. The effect of light intensity on photosynthetic rates of these marine benthic green algae were measured by continuously recording oxygen electrode system. The photosynthetic rate of the green alga Ulva pertusa saturated approximately at 14,000 Lux, while that of the other species was beyond 20,000 lux. The resulting photosynthetic light curves indicated that all the species under investigation have relatively high saturation levels.

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 134-140]

Absorption spectra of the pigments in 80% acetone and the chlorophyll a/b ratio of intertidal benthic green algae were measured. A marine seed plant, Zostera marina, and two other species of land seed plants, Robinia pseudoacacia and Spinacia oleracea, were measured similarly for comparison. The thalli of marine green algae were found to be different from higher plant leaves in the absorption bands of chlorophyll b relative in height to those of chlorophyll a. The a/b ratios found for Ulva pertusa, Enteromorpha spiralis, Codium fragile and Bryopsis hypnoides were respectively 1.75, 1.74, 1.48 and 1.44, which are appreciably different from the ratios obtained for Zostera marina and Robinia pseudoacacia, being 2.40 and 3.02 respectively. Adaptation to higher light intensity and the lower a/b ratio are characteristic of the intertidal benthic green algae and seem to be of significance in the evolution of photosynthetic organisms.

* The following aided in the present study: WU Chaoyuan [0702 6389 0337], ZHANG Derui [1728 1795 3843], FENG Zhongliang [1627 0112 5328], FEI Xiugeng [6316 0208 4837], ZHANG Junfu [1728 1498 3940] and DONG Meiling [5516 5019 7861].

Contribution No 531 from the Institute of Oceanology, Chinese Academy of Sciences.

AUTHORS: WANG Suluan [3769 4790 1227]
 JIANG Jingrong [4545 2529 2837]

ORG: Both of Xiamen Aquatic Products College

TITLE: "On Porphyra monosporangia, a New Species from China"

SOURCE: Beijing HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 141-149

TEXT OF ENGLISH ABSTRACT: Recent surveys of the genus Porphyra in Fujian Province have revealed several species that have not been reported by the phy-cologists in the world. In this paper, Porphyra monosporangia sp. nov., one of the several species found, is described.

The plant is a single membranous blade composed of monostromatic cells, general-ly round, half-round and irregularly undulated like flowers in shape; measuring about 7-22 cm high and 7-27 cm wide; orange yellow in color at the margin of the blade, and green or grass green in the middle of the vegetative portion; with a cordate or umbilicalic base; sessile with a small discoid holdfast near the base; margin of blade with microscopic teeth consists of 1-3 dentate cells, more dense at the base; thallus about 24-28 μ in thickness at the edge, with a thin mucilage membrane about 3.5 μ thick, 28-42 μ in the middle vegetative

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 141-149]

cell portion, the mucilage membrane about 5-7 μ thick, 38-45 μ near the base, the mucilage membrane about 7-10 μ thick; vegetative cell rectangular or ir-regularly polygonal in shape in surface view, measuring about 8.5 \times 10 μ to 12 \times 18 μ , about 17-24 μ high, 14-17 μ wide in cross section view; each cell with one large star-shaped chromatophore; when drying, blade adhering well to the paper and turns to purple.

Plant hemispherical and bearing asexual reproductive cells, producing monospores, first appearing from the vegetative cells at the margin, two or four monospores usually in one group in surface view, 10-18 μ in diameter with a dense star-shaped chromatophore, orange yellow in color, released from the thallus, then making amoeboid movements for awhile, directly germinating to young buds; from the end of December to the end of March the next year the plants bear only monospores.

Plant hemispherical, spermatangiophore sometimes situated outside the carpo-sporangia or mixed with monosporangia and carposporangia, one spermatangiophore with 64 spermatangia, 16 in the surface view, four layers in cross section view, division formula $\sigma^4 A_4 B_4 C_4$; carposporangia with 32 carpospores, 8 carpo-spores in the surface view, and four layers in cross section, division formula $\phi^4 A_4 B_4 C_4$, when fully matured carpospores are deep red in color and always in a

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 141-149]

group and thicker than the other parts of the plant.

From the middle of March we found that both monosporangia and spermatangioophore mixed together in one thallus until the end of March, the plant only bearing carposporangia and spermatangioophore, the monospore at the end, the time of sexual reproduction in this species being shorter than the asexual.

Plants grow on the bamboo tube or nylon rope for laver cultivation at the littoral region.

In the world, the following species, marginally dentate, have been reported: *P. crispata* Kjellm (China, Japan), *P. suborbiculata* Kjellm. (China, Japan), *P. guangdongensis* Tseng et T. J. Chang (China), *P. dentata* Kjellm. (China, Japan), *P. haitanensis* T. J. Chang et B. F. Zheng (China), *P. denticulata* Levering (Australia), *P. scanthophora* Oliveira Filho et J. Coll (Brazil), *P. jujalaki* J. Coll et Oliveira Filho (Uruguay), *P. carolinensis* J. Coll et J. Cox (America). The *P. monosporangia* sp. nov., when compared with the above reported species, varied greatly.

In accordance with the fact mentioned above and the characteristic of our species, it releases the monospores for a rather long period, from the leaflet.

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 141-149]

stage to over 20 cm in size, while the release of carpospores is in a short period of time. We proposed this plant as a new species and named it *Porphyra monosporangia*.

* The following helped in the present study: ZHANG Junfu [1728 1428 3940], Institute of Oceanology, Chinese Academy of Sciences; WU Tianlin [0702 6991 306], Fujian Porphyra Experimental Farm; ZHOU Zhenying [0719 6297 5391], Fuzhou Teachers University; WANG Yiqiang [3769 5636 1740], Xiamen Aquatic Products College.

[Continuation of HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 150-152]

Terminal articles of both rami of the second cirrus provided with a few bidentate setae (lanceolate spines), having serrate edges separated from the proximal first or second pairs of somewhat larger teeth.

This new species differs from Tetrachthamalus obliteratus Newman, the only species of the genus, in the presence of sutures on the upper portion of the composite rostral plate, in the labrum crest being deeply concave, in the cutting edge of the first maxilla being armed with six to eight stout spines below the notch, and in the two rami of the third cirrus being equal in length.

* LIU Ruiyi [0491 3843 3768] and WANG Yongliang [3057 5328] helped with the present study.

Contribution No 532 from the Institute of Oceanology, Chinese Academy of Sciences.

AUTHOR: CHEN Baizhao [7115 1920 5571]

ORG: Institute of Oceanology, Chinese Academy of Sciences

TITLE: "Two New Species of Crabs from South China Sea"

SOURCE: Beijing HAIYANG YU HUZHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Chinese Vol 11 No 2, Apr 80 pp 154-160

TEXT OF ENGLISH ABSTRACT: While studying the crab fauna of the South China Sea, the writer found two new species of the genus Dorippe (Dorippe), the descriptions of which are given below. Type specimens of these two new species are deposited in the Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China.

Dorippe (Dorippe) sinea sp. nov.

Holotype: 1 ♂ (C00117). Nansha Island, Guangdong Province, 1954, Ill. 8.

Allotype: 1 ♂ (D017 B-21). 71°04', 112°0'E, depth 48 m, bottom muddy sand 1960, Ill. 5.

Paratype: 1 ♂, 1 ♀ (C00111), Shanwei, Guangdong Province, 1955, I. 15.

Large species. Body thickly covered with brown hairs (excepting manus and fingers of chelipeds, two terminal segments of first and second ambulatory legs).

[Continued from HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 129-130]

Cheliped slender, thin long, dorsal face uneven and wrinkled, with very well defined keeling and with about 17 tubercles which are covered with granules. Rostrum heavily with two triangular teeth. Outer orbital tooth long, acute and projecting beyond frontal teeth. Infraorbital tooth large, curved and with long teeth along its outer lateral border and slightly projected beyond outer orbital tooth. Teeth present along the anterolateral border of carapace of young only, but absent in the full-grown male; in the female, present in both young and adults.

Cheliped of the adult male asymmetrical or symmetrical. Surface of ischium, merus and carpus covered with small, more-or-less pointed, tubercles. Palm smooth, it asymmetrical much swollen. Fingers with blunt teeth along their inner borders.

Second pleopod long, longest, about 2.6 times as long as carapace. First antennule the longest than the second but longer than the rest. Posterior two pairs of antennule very short and slender, located on the dorsal face. Palm short, bare at posterior border with a blunt tubercle. Finger short, hooked.

Abdomen of mature females in both sexes: in the male, the second and third segments each with a transverse row of three small blunt or acute teeth,

[Continued from HAIYANG YU HUZHAO Vol 11 No 2, Apr 80 pp 154-160]

Fourth segment with only a single median tooth. Male first pleopod strong, with some teeth, opening toward its extremity. Extremity of chitinous process reduced to a small tooth. Teeth of third to fifth abdominal segments of female with a transverse row of three small teeth, the median tooth of third to fourth segments small, the outer teeth small and acute, the outer one longest.

Dorippe (Dorippe) sinica sp. nov.

Material: ♂ (holotype), 20°N, 113°30'E, depth 76 m, bottom sand mud, 1959,

IV, 19.

Allotype: ♀ (KAP-62), 20°30'N, 113°E, depth 92 m, bottom muddy sand, 1959,

A, 29.

Paratype: ♂, ♀ (KAP-19), 21°15'N, 113°30'E, depth 11 m, bottom sand, 1959, S, 27.

This species closely resembles *Dorippe (Dorippe) sinica* sp. nov., but differs from it in being smaller in size. Dorsal face of carapace without wrinkling, the tubercles small but distinct. Cardiac-intestinal region armed with a transverse row of three teeth. Anterolateral border toothed.

Cheliped of the adult male (53 specimens) symmetrical. Surface of merus covered with small tubercles.

[Citation: *Journal of Management Studies*, vol. 11, no. 2, Apr. 1974, pp. 139-150].

* This investigation is related with the present study. The authors [669, 1967-1968], [670, 1969], [671, 1970], [672, 1971] and [673, 1972] and [674, 1973] and [675, 1974].

University of California, Los Angeles, Los Angeles, California 90095-1553, U.S.A.

Received 15 November 2005; accepted 15 November 2005

Copyright © 1997 by John Wiley & Sons, Inc.

10-11-1968 [MAY 27TH 5PM]

11. *Journal of the American Medical Association*, 1990; 263: 1025-1027.

Address: Institute of Oceanology, Chinese Academy of Sciences

1.112. *On the evolution of the morphological characters of the head and jaws of the 1920-1930s. The evolution of the head and jaws of the 1920-1930s. The evolution of the head and jaws of the 1920-1930s.*

REVISTA DE LINGÜÍSTICA Y LINGÜÍSTICA TEÓRICA [REVISTA DE LINGÜÍSTICA Y LINGÜÍSTICA TEÓRICA] 1

DOI: 10.1002/for

100. On January 20, 1957, the important morphological characters of eggs and larvae of *Diapomphax indica* (Günther), from early stages to late post-larva, were described. A larva mid, 21.0 cm in total length, was described. This was the first larva of the living specimens artificially reared in our laboratory (Shanghai, China). The eggs obtained by artificial fertilization had been collected in south of the Huang He River (Yellow River) and also from the mouth of the Yangtze River, Shanghai, during the spawning season of 1957. The description of eggs and larvae of the *Diapomphax indica* found in the present study are at the same stage. Therefore, we made use of

[TRANSLATION OF HANYANG LI, HANYANG Vol. 11 No. 2, Apr 80 pp 161-168]

These observations are given for identifying and separating them, these results being described in the present paper. In addition, we discuss the phenological frequency of the larvae stages of Platycephalus indicus.

RESUME: Les larves de Platycephalus indicus ont été observées et séparées, les résultats étant décrits dans le présent papier. En addition, on discute la fréquence phénologique des stades larvaires de Platycephalus indicus.

Dr. Li Han Yang, Professor, HANYANG Institute, one of the founders of marine ecology in China, was made significant contributions to the study of marine fisheries and ecology in China. Died in March, 1971.

MYOCHI (Miyoshi Taro) (1911-1988)

1981 Institute of Hydrobiology, Chinese Academy of Sciences

1981 "The Skull of Euprymna scolopes and Its Adaptation to Predatory Behavior"

1981 In the HANYANG VI JOURNAL [OCEANOLOGIA ET LIMNOLOGIA SINICA] in Hanyang Vol. 11 No. 2, Apr 80 pp 169-172

KEY OR ENGLISH SUMMARY: The skull of Euprymna scolopes exhibits the following features, in which it differs from general Cyprinid fish:

1. The premaxilla, maxilla and dentary are fused with each other. The dentary are elongated and stout. The median process of the dentary projects toward the median indentation of the maxilla.

2. The preopercle is elongated. The anterior parts of the well-developed preopercle are inserted into the suprathymal, preopercle and maxilla. The posterior part of the preopercle is forked and articulated with the lateral ethmoid.

3. In the lateral aspect, the skull has two special depressions, the lateral (medial) fossa and the lateral fossa of the symphysis, for the insertion of various special muscles.

4. The post-symphysal fossa, from which the anterior part of the insertion on skull, is shallow and deep.

[Journal of Zoology Vol. 11 No. 2, Apr. 80 pp. 169-172]

The above mentioned above are adaptations to predatory habit. However, *Elopichthys bambusa* shows a large number of the characters of the lower teleosts. For example, the second and third centra are not completely fused, chief dorsal neural spines are forked, ossified prethoracic is wanting, the series of suborbitals is slender except for the fourth suborbital, the pharyngeal process is simple, its posterior process is compressed, etc.

In view of the above characteristics, *Elopichthys bambusa* must be a branch of the teleostean fish, modified as a result of adaptation to predatory habit.

RECEIVED: 10th August [1987 1141]
ACCEPTED: 19th August [1987 1134]

FROM: The Institute of Oceanology, Chinese Academy of Sciences

LOCATION: The Family Brachypterygidae--*Brachypterygia margaritiformis*

FROM: The INSTITUTE OF OCEANOLOGY [OCEANOLOGIA ET LIMNOLOGIA SINICA] in
[1987] Vol. 11 No. 2, Apr. 80 pp. 175-178

ABSTRACT: Three specimens of fish belonging to the Brachypterygidae were captured on 10 February 1980 in the South China Sea off the coast of Hainan Island at a depth of 210 m. One of them is identified as *Brachypterygia argentea* Jordan et Fowler, 1903, and the other two are considered to be a new species, here named *Brachypterygia margaritiformis*.

The genus *Brachypterygia* Jordan et Fowler, 1903, as known at present, amounts to 10 species. They are *B. argentea* Jordan et Fowler, 1903, *B. acanthoptera* Regan, 1906, *B. pinnatifida* Kishinoue, 1932, *B. argentea*, Briggs et Berry, 1959, *B. pinnatifida* (1903), and *B. margaritiformis* sp. nov. A comparison of their morphological characters is shown in the table.

[Received 10 November 1999; accepted 20 November 1999; Vol. 11, No. 2, Apr. 2000, pp. 173-178]

Opuntia polyacantha (Engelm.) Chase, et Tidestrom, *ibid.*

11. 11. 1941. A. 11. 1941. P. 251. A. 12.

Body elongate, moderately and rather depressed in vivo. Depth 7.1 in standard length with 7.9-8.4 head 3.0-3.5; depth of caudal peduncle 15.3-17.8. Head rather depressed. Snout pointed. Snout 4.3-4.8 in head; eyes 3.0. Eyes very large, close together on the upper part of head. Interorbital space very narrow. Snout nearly reaching to below front border of eye. Teeth on jaws in villous bands. Gill opening rather broad, lateral. Opercular and interopercular teeth with a straight spine posteriorly.

Body smooth. Lateral line slender, beginning from the upper corner of the gill opening, extending posteriorly to a position below the 9th to 10th dorsal ray.

Two dorsal, compressed. First dorsal with three short and hard spines. Second dorsal minute, rays prolonged in filaments at tips. Pectoral broad. Ventrals subequal. Anal subventral.

body (over, rounded up) distributed equally on the posterior part of head and the sides of the body.

Continuation of HSIYAN 95-00780 Vol. 1, No. 2, 4th ed. pp. 171-178

Black and white: 80% (500) / 20% (100) color.

Environ Monit Assess (2008) 142:119–126
DOI 10.1007/s10661-008-9400-0

The design and development of the instrument is described in the following sections.

is considered part of the property of institutions of knowledge, United Academy of Sciences.

AUTHORS: SU LINGJIAN [0039 2052 3768]
ZHOU BINGJIA [6772 1815 2494]
YU QIQUANG [1574 0948 1730]
ZHAN HUIXU [6124 7703 4406]

FROM: All of the East China Sea Fisheries Institute, China National Bureau of Aquatic Products

TITLE: "Two New Fish from the East China Sea"

ABSTRACT: SUYING HUAYANG YU HUIHAO [OCEANOLOGIA ET LIMNOLOGIA SINICA] in CHINESE Vol. 11 No. 2, Apr 80 pp 179-184

TEXT OF ENGLISH ABSTRACT: Some fish specimens were collected from the East China Sea off Wenzhou (Zhejiang Province) and Fuding (Fujian Province) in May, 1975. In addition, Stallia immaculatus and Ctenogobius puncticeps are considered as new combinations and described as follows. The holotype, allotype and paratype are deposited in the East China Sea Fisheries Institute, China National Bureau of Aquatic Products.

Stallia immaculatus Su et Zhan sp. nov.

D. XI-11; A. 11-11; P. 22-23; V. 1-5; C. 12 branched rays (scarcely 11).
Snout in vertical series 45-56.

[ENGLISH ABSTRACT OF HUAYANG YU HUIHAO Vol 11 No 2, Apr 80 pp 179-184]

Body slender, elongate, compressed, 3.6-4.7 in length, head 3.0-3.3. Head large, snout 2.8-3.1. Snout short and blunt. Eye large, placed in anterior position. Upper lip projecting above contour of head, interorbital space narrow. Nostrils 2, set closely, anterior nostril tubular, posterior nostril a simple hole, situated near the anterior edge of eye.

Mouth small, terminal, lower and horizontal. Maxillary broad, its posterior end rounded, slightly convex, extending far beyond eye; the small supra-maxillary process, the lower edge of its posterior part covering the upper margin of the mouth. Teeth small, in narrow bands anteriorly, the bands narrowing and becoming a single row posteriorly, vomer and palatine toothless. The opercular bones all simple, a small pore located on the anterior margin of the upper opercular bone; 4 nostrils, suborbital pores 5, postorbital pores 5. Interorbital space 4 in total, rather small, the first 4 arranged in 2 pairs and the other 2 in a median series. Along the preopercular margin are 6 pores, the first 3 small, 3 pores on lateral-ventral side of lower jaw, 1st and 2nd small, 3rd large, 3rd and 4th set, the others larger and wide-set, the last one behind the posterior orbital margin. Gill membrane free from isthmus, gill covers all closed, slender, 11 + 20 in first arch.

Body covered with thin, cycloid scales; head, nape, pectoral fin base and breast

labeled. Lateral line incomplete, tube-like, rather high in position, originated from head, curved upward over gill-opening, extending near the dorsal fin base, ending in the last spine of dorsal backward.

Dorsal fin continuous, inserted above the posterior edge of gill opening, the 2nd anterior spines forked as Y shape, connected by the fleshy fin membrane, the posterior spines as usual; soft rays longer than spines, the base of the last two rays rather close-set, some posterior rays reaching to the caudal base. Soft dorsal and anal fins similar. Pectorals broader, obtuse-pointed. Ventrals truncate, pointed, second ray longest, its length similar to pectoral. Caudal pointed.

In formalin, an indistinct narrow gray dusky band along the base of dorsal fin. Snout, margin of lips and anterior part of lower jaw dusky. Top of head yellow brown, scattered with minute deep brownish spots. The membranes between 2nd to 4th and 8th to 9th of spinous dorsal black (some specimens none), without any bands on all other fins.

Remarks. The present species closely resembles Stalix omanensis Norman recorded off the Oman Gulf, both species having the posterior edge of opercle and adjacent branchiostegal membrane not conspicuously pigmented, caudal fin uniformly

pigmented, and all with simple pattern of infraorbital pores and fifth mandibular spine. It should be pointed out that S. omanensis has numerous small black spots on cheek, 9 infraorbital pores and not arranged in order, but the present species has no small black spots on cheek, 10 infraorbital pores and arranged in good order.

Based on Imaginalatus in reference to having no spots on cheeks and top of head.

Holotype: No 5875-576, 23 mm in length, collected from off Wenzhou, Zhejiang Province, depth 80-90 m, on 31 May 1973.

Paratypes: 1. No 5875-588, 3875-707, 24 mm in length, collected with the holotype specimen. 2. No 5875-708-709, 29-31 mm in length, collected from off Fuzhou, Fujian Province, depth 110 m, on 30 May 1973.

Stenolepis pedunculata Dorey et al. sp. nov.

D. VI, 12; A. 12-13; P. 18-19; V. 1-5; C. 16. Scales in lateral series 27-30; caudal series 7-8.

Body elongate, compressed, 4.7-6.0 in length, head 3.4-4.1. Snout short, 4.0-5.3 in head, about 1/2 in eye. Eye rather large, upper orbit margin slightly

[Taxonomic description of *HAUTAU* YU HUIZHAO Vol 11 No 2, Apr 80 pp 179-184]

Upper jaw, *lower jaw* narrow. Teeth sharp, in narrow bands on both jaws. *Mandible*, *upper jaw* in lateral, outer rows enlarged, in front on each side *small* *enlarged* *teeth*.

Head *of* *body*, *head* naked, nape with a naked space extending backward *in* *front* *of* *head*.

Dorsal *ray* *of* *body*, *12* *rays*, the 1st-3rd very long and slender, when depressed, *second* *and* *third* *rays*, genital papillae slender *and* *short* *in* *female*.

Color *of* *body*, *90* *irregular* *yellow* *blotches* *on* *cheek* *and* *opercle*, a yellow *oblique* *stripe* *from* *eye* *to* *nape*, lateral margin of upper lip reddish, the *anterior* *margin* *of* *opercle* with a red spot; a yellow blotch both above the *posterior* *margin* *of* *opercle* *and* *above* *of* *pectoral*; 9 yellow vertical bands on side of body; *tip* *of* *the* *snout* *is* *reddish*, the membranes of spines and soft dorsal with *yellow* *spots* *and* *with* *a* *yellow* *longitudinal* *stripe*.

Remarks. The present species closely resembles *Ctenopoma gymnauchen* (Bleeker), but differs from it in having 12 rays in the dorsal fin (10 in latter); 12-13 rays in the anal fin (10 in latter); eye rather large, 2.7-3.6 in head (4.06-

[Taxonomic description of *HAUTAU* YU HUIZHAO Vol 11 No 2, Apr 80 pp 179-184]

Head *of* *body*, *head* *rather* *short*, 2 in eye diameter (about equal in latter); *anterior* *margin* *of* *opercle*, bands and stripes is a noticeable difference in the *color* *of* *body* *and* *head* *of* *body*.

Remarks. *Similarity* *to* *the* *irregular* *yellow* *blotches* *and* *stripes* *of* *body* *and* *head* *of* *body* - they still remained but faded to pale).

Material *of* *body*, *10* *specimens* *in* *length* (*♀*), collected from off Wenzhou, *depth* *of* *body* *70* *m*, on 29 May 1975.

Material *of* *body*, *10* *specimens* *in* *length* (*♂*), collected from off Wenzhou, *depth* *of* *body* *70* *m*, on 29 May 1975.

Material *of* *body*, *SH75-666*, *SH75-696*, *SH75-699*, *SH75-701*, 29-37 m *depth* *of* *body* *off* *Wenzhou*, depths 82-98 m, on 30-31 May, 1975.

Material *of* *body*, *SH75-666*, *SH75-696*, *SH75-699*, *SH75-701*, 29-37 m *depth* *of* *body* *off* *Wenzhou*, depths 82-98 m, on 30-31 May, 1975.

Material *of* *body*, *SH75-666*, *SH75-696*, *SH75-699*, *SH75-701*, 29-37 m *depth* *of* *body* *off* *Wenzhou*, depths 82-98 m, on 30-31 May, 1975.

Material *of* *body*, *SH75-666*, *SH75-696*, *SH75-699*, *SH75-701*, 29-37 m *depth* *of* *body* *off* *Wenzhou*, depths 82-98 m, on 30-31 May, 1975.

AUTHOR: YE Youwen [0151 0645 2429]
WU Huihang [0702 1979 5366]

ORG: Both of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "The Relativistic Deuteron Wave Function"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 1-7

TEXT OF ENGLISH ABSTRACT: Starting from the Bethe-Salpeter equation, the coupled equations for the bound states of the deuteron may be reduced to the ordinary three-dimensional ones and the number of the components of the wave function is decreased by using the approximation of the instantaneous interaction in the center of mass system. The wave functions of the deuteron are expanded in terms of the spherical and the vector spherical harmonics and the radial coupling integral equations are obtained. Some properties of the deuteron wave functions are also discussed. Qualitative estimations indicate that the relative ratio of the probability of P wave to that of S wave is about the order of $\frac{1}{2} \left| \frac{R}{a} \right|^2$.

AUTHOR: LIU Bo [0491 3136]
LI Qingzhu [2621 3237 3387]
ZHAO Enming [6192 1869 1686]

ORG: LIU and LI both of the Institute of Theoretical Physics, Chinese Academy of Sciences; ZHAO of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "The Bound States of the Isobar $\Delta(1236)$ "

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 8-11

TEXT OF ENGLISH ABSTRACT: We have discussed the single particle energies and wave functions of a bound isobar in U_6 by using the Schrodinger equation.

AUTHOR: LONG Jinyun [7893 1783 0061]

ORG: Guangdong Institute of Mining and Metallurgy

TITLE: "The Cloud Tube and the Bubble Tube"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 12-27

TEXT OF ENGLISH ABSTRACT: At present, cloud chambers and bubble chambers are the most important detecting instruments of particle tracks in fundamental particle physics. But the working efficiency of both the cloud chamber and bubble chamber is very low. It cannot satisfy the requirements of detection. This essay presents two types of continuous sensitive high efficiency particle detecting instruments, namely the cloud tube and the bubble tube. It also presents their historical background, theoretical analysis and some experimental data.

AUTHOR: Chenxian [7120 2529 6343]

ORG: Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: " $2\pi \rightarrow 2K$ Scattering and πK Elastic Scattering"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 28-32

TEXT OF ENGLISH ABSTRACT: The $2\pi \rightarrow 2K$ low energy scattering cross-section was obtained using the relation between field and current. The low energy πK elastic scattering cross-section and its scattering length were also obtained using this theory.

AUTHORS: LI Bingyan [2621 3521 1366]
XIAN Dingchang [0605 7844 2690]
YAN Su [0917 3126]
CHEN Tianlun [7115 1131 1510]
YANG Qingzhi [2799 1987 3796]
LU Jingfa [0712 2529 6099]

ORG: LI and XIAN both of the Institute of High Energy Physics, Chinese Academy of Sciences; YAN, CHEN, YANG and LU all of Nankai University

TITLE: "The Influence of the Self-Energy Diagrams on the Solutions of a Scalar Bethe-Salpeter Equation"

NOTE: JIN LIANG GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARTIS] in Chinese Vol 4 No 1, Jan 80 pp 33-42

TEXT OF ENGLISH ABSTRACT: The influence of the self-energy diagrams on the solutions of the Bethe-Salpeter equation is studied by taking a $g\phi_1^*(x)\phi_1(x)\phi_2(x)$ interaction and under the ladder approximation. The results show that for ground state solutions, the self-energy diagrams will diminish the eigenvalues and alter wave functions slightly. However, for the excited states and anti-symmetric solutions, the influence of the self-energy diagrams is considerable which completely alters the properties of the solutions. The results also

.

[Continuation of GAONENG WULI YU HE WULI Vol 4 No 1, Jan 80 pp 33-42]

Now that the solutions from the ladder approximation are meaningful only in the loosely bound cases, and as the binding becomes tight the contribution from the self-energy diagrams becomes important.

AUTHOR: JIEP Liangping [1088 1696 1637]
ZHAO Zongren [1728 1350 8763]

ORG: Both of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "The Effects Induced by a Λ Hyperon on the Pairing Correlation in Nucleus"

SOURCE: SHIJIANG GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 43-48

TEXT OF ENGLISH ABSTRACT: In this paper, the effects induced by a Λ hyperon on the pairing correlation in the nucleus are investigated. For simplicity, the δ -type Λ -N residual interaction is adopted. We have calculated the energy spectrum and wave function of the low-lying excited states for $\Lambda^{19}\text{O}$. Then using infinite sum approximation, the correlation effect for two nucleons in the total energy shell induced by a Λ -hyperon is discussed. Finally, by means of some approximation, the correlation effects for n pairs of nucleons induced by a Λ is analyzed.

AUTHOR: JIEP Xianjian [0719 0752 1696]
GUO Fiyun [5641 0012 0645]

ORG: Both of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "Weak Coupling Approximate Schwinger-Dyson Equation of the Straton's Propagator in Quantum Chromodynamics and Its Solutions"

SOURCE: SHIJIANG GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 49-62

TEXT OF ENGLISH ABSTRACT: The weak coupling approximate Schwinger-Dyson equation of the straton's propagator in four-dimensional QCD theory and the problem of the straton's confinement are discussed. It is proved that, when we choose Landau gauge, the obtained Schwinger-Dyson integral equation of the straton's propagator may be transformed into a very simple form. Then we change it into a (1st) order non-linear differential equation. It has two solutions: a confinement solution and a solution that has no confinement for the stratoms.

The effective potential in QCD is derived by functional method, and the ground-state energy difference between these two solutions is discussed. In our approximation, we calculate the vacuum graph to the two-loop diagrams. We may conclude that stratoms are not confined in our approximation.

AUTHOR: WANG Yingsai [1749 1191 2088]
LI Guangliu [0012 0342 1525]
ZHANG Zongye [1726 1430 8764]

ORG: All of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "The π Condensation Effects in Finite Nuclei"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 63-72

TEXT OF ENGLISH ABSTRACT: In this paper the π condensation effects in finite nuclei are investigated. We have supposed a model hamiltonian, and have calculated the eigenvalue in the Random Phase Approximation. The energies and the π condensed number of the ground state and the one phonon excited states are obtained. The results are discussed for the case of ^{16}O .

AUTHOR: SUN Hongzhou [1327 3163 3166]

ORG: Beijing University

TITLE: "On the Irreducible Representations of the Compact Simple Lie Groups of Rank 2 (I)"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 1, Jan 80 pp 73-92

TEXT OF ENGLISH ABSTRACT: In this paper, we analyze the commutation relations of the infinitesimal operators of the group SU_3 and find that the eight infinitesimal operators of the group SU_3 can be written as a scalar operator A , three angular momentum operators (L_1, L_0, L_{-1}) and two sets of the irreducible tensor operators of rank $1/2$ ($T_{\pm 1/2}, V_{\pm 1/2}$). By means of the commutation relations of these operators, all irreducible representations of the group SU_3 can be easily obtained.

In this paper, the matrices corresponding to these operators in the irreducible representation (λ, μ) are given; therefore, the irreducible representation and its representation space $R^{(\lambda, \mu)}$ are completely defined. In addition, a method for calculating the scalar factors of the reduction coefficients and the symmetric relations of those factors is also given. As examples, the scalar

[Continuation of QIAONENG WULI YU ME WULI vol 4 No 1, Jan 80 pp 73-92]

Factors of the reduction coefficients of $(\lambda_\mu) \otimes (10)$, $(\lambda_\mu) \otimes (01)$, $(\lambda_\mu) \otimes (20)$ and $(\lambda_\mu) \otimes (11)$ are calculated.

In the last part of this paper, we define the irreducible tensor operators of the group SU_3 and prove the corresponding Wigner-Eckart theory.

The method used in the discussion of the group SU_3 may be extended to all of the compact simple Lie groups of rank 2 and we shall discuss them in two succeeding papers.

Address: 100029 Beijing [0719 6721 3014]

Unit: University of Science and Technology of China

Theme: "Confinement Freedom and the Wave Functions at the Origin and the Charge Transfer of the $1/\psi$ and the Υ "

Source: QIAONENG WULI YU ME WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA QUAERITA] 10 January Vol 4 No 1, Jan 80 pp 93-102

Text of the Abstract: On the basis of phenomenological quantum chromodynamics (QCD), a nonrelativistic linear and Coulomb-like potential description of the strong interaction between quarks is assumed and it is considered that the effective quark-gluon coupling constant approaches the asymptotically free limit of g_s^2 . The choice of the potential parameters is so made as to fit the experimental values of the wave functions at the origin as well as the masses of the $1/\psi$ and the Υ . Following the calculation referring to the Ψ' and the Υ' , we acquire a consistent explanation for both the relative values of the wave functions at the origin and the experimental mass differences of these particles.

1984. *Journal of the Royal Society of Medicine*, 77, 100-102.

1985. *Journal of the Royal Society of Medicine*, 78, 100-102.

1986. *Journal of the Royal Society of Medicine*, 79, 100-102.

1987. *Journal of the Royal Society of Medicine*, 80, 100-102.

1988. *Journal of the Royal Society of Medicine*, 81, 100-102.

1989. *Journal of the Royal Society of Medicine*, 82, 100-102.

1990. *Journal of the Royal Society of Medicine*, 83, 100-102.

1991. *Journal of the Royal Society of Medicine*, 84, 100-102.

1. $\alpha = \{ \alpha_1, \alpha_2, \dots, \alpha_n \}$
2. $\beta = \{ \beta_1, \beta_2, \dots, \beta_m \}$

3. The conditions in Lemma 1 are satisfied, where $\alpha_1, \alpha_2, \dots, \alpha_n$ are the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ are the elements of the set β .

4. Let $\alpha_1, \alpha_2, \dots, \alpha_n$ be the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ be the elements of the set β . Then the conditions in Lemma 1 are satisfied.

5. Let $\alpha_1, \alpha_2, \dots, \alpha_n$ be the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ be the elements of the set β . Then the conditions in Lemma 1 are satisfied, where $\alpha_1, \alpha_2, \dots, \alpha_n$ are the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ are the elements of the set β .

6. $\alpha = \{ \alpha_1, \alpha_2, \dots, \alpha_n \}$
7. $\beta = \{ \beta_1, \beta_2, \dots, \beta_m \}$

8. The conditions in Lemma 1 are satisfied, where $\alpha_1, \alpha_2, \dots, \alpha_n$ are the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ are the elements of the set β .

9. Let $\alpha_1, \alpha_2, \dots, \alpha_n$ be the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ be the elements of the set β . Then the conditions in Lemma 1 are satisfied.

10. Let $\alpha_1, \alpha_2, \dots, \alpha_n$ be the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ be the elements of the set β . Then the conditions in Lemma 1 are satisfied, where $\alpha_1, \alpha_2, \dots, \alpha_n$ are the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ are the elements of the set β .

11. Let $\alpha_1, \alpha_2, \dots, \alpha_n$ be the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ be the elements of the set β . Then the conditions in Lemma 1 are satisfied, where $\alpha_1, \alpha_2, \dots, \alpha_n$ are the elements of the set α , and $\beta_1, \beta_2, \dots, \beta_m$ are the elements of the set β .

doi:10.1017/S0007122614000061 (Print); doi:10.1017/S0007122614000061 (Online) Published online by Cambridge University Press

113 (1) ... und Den auf Seite 140 Absätze 1

RECEIVED BY THE LIBRARY OF CONGRESS JULY 10 1968
FROM THE NATIONAL ARCHIVES

THEOREM 1. Let \mathcal{A} be a \mathcal{C}^* -algebra. The production comm. system for the value λ is polynomial time computable, and the detection of the value λ is decidable.

Received 11 October 1997; accepted 11 February 1998

© 2004 Blackwell Publishing Ltd, *Journal of Internal Medicine* 255: 103–110

— JOURNAL OF THE FLORIDA GEOLOGICAL SURVEY
— VOL. 1, NO. 1, 1901, P. 1-10

[illegible][illegible]

[From Question 21, ANSWER, vol. 1, 10, vol. 2, May 20, pp 137-139]

Particular of the linear variety of the variational equations in $(A_{22})\theta(0)$, $(A_{22})\theta(0)$ and $(A_{22})\theta(0)$ are given.

In the last part of this paper, we define the variable energy operators of the group G and give the corresponding Hilbert-Schmidt Theory.

1. Let G be a group, H a Hilbert space, $\{T_t\}_{t \in G}$ a family of operators on H satisfying the conditions:
1. $T_0 = I$, $T_t T_s = T_{ts}$, $T_t^* = T_{t^{-1}}$,
2. T_t is unitary for all $t \in G$,
3. T_t is strongly continuous at $t=0$,
4. T_t is strongly continuous at $t=0$.

Let G be a group, H a Hilbert space, $\{T_t\}_{t \in G}$ a family of operators on H satisfying the conditions:
1. $T_0 = I$, $T_t T_s = T_{ts}$, $T_t^* = T_{t^{-1}}$,
2. T_t is unitary for all $t \in G$,
3. T_t is strongly continuous at $t=0$,
4. T_t is strongly continuous at $t=0$.

1. Let G be a group, H a Hilbert space, $\{T_t\}_{t \in G}$ a family of operators on H satisfying the conditions:

1. $T_0 = I$, $T_t T_s = T_{ts}$, $T_t^* = T_{t^{-1}}$,
2. T_t is unitary for all $t \in G$,
3. T_t is strongly continuous at $t=0$,
4. T_t is strongly continuous at $t=0$.

Let G be a group, H a Hilbert space, $\{T_t\}_{t \in G}$ a family of operators on H satisfying the conditions:
1. $T_0 = I$, $T_t T_s = T_{ts}$, $T_t^* = T_{t^{-1}}$,
2. T_t is unitary for all $t \in G$,
3. T_t is strongly continuous at $t=0$,
4. T_t is strongly continuous at $t=0$.

1970007 Optik. Kometen [1778 133 6000]

1970008 Optik und die Naturtheorie der Materie [1778 133 6000]

1970009 Optik und die Naturtheorie der Materie [1778 133 6000]

1970010 Optik und die Naturtheorie der Materie [1778 133 6000]

1970011 Optik und die Naturtheorie der Materie [1778 133 6000]

1970012 Optik und die Naturtheorie der Materie [1778 133 6000]

1970013 Optik und die Naturtheorie der Materie [1778 133 6000]

1970014 Optik und die Naturtheorie der Materie [1778 133 6000]

1970015 Optik und die Naturtheorie der Materie [1778 133 6000]

1970016 Optik und die Naturtheorie der Materie [1778 133 6000]

1. Author: Wei Yunduo (1915-1995)
 2. Author: Wang Xuejun (1902-1988)
 3. Author: Guo Shou (1915-1995)
 4. Author: Guo Shou (1915-1995)

1. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

2. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

3. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

4. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

1. Author: Guo Shou (1915-1995)
 2. Author: Guo Shou (1915-1995)
 3. Author: Guo Shou (1915-1995)

4. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

5. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

6. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

7. Author: Guo Shou (1915-1995) and the staff of the Institute of Mathematics, the Chinese Academy of Sciences

Author: H. Jinnai [0128 9862 0137]
 Classification: [7244 7022 0126]

Unit: Institute of High Energy Physics, Chinese Academy of Sciences

Title: "A New Form of Massless Scalar Fields, Spontaneously Broken Symmetry and Spontaneous Transition"

Source: CHINESE JOURNAL OF PHYSICS [PHYSICA SINICA] 1978, 27, 191-202

Abstract: The spontaneous breakdown of a continuous symmetry implies a discrete symmetry of continuous vacuum states, while Goldstone theorem ensures the existence of zero mass Goldstone bosons. When a particular vacuum state $|\psi_0\rangle$ is chosen, other degenerate vacua $|\psi_n\rangle$ are usually viewed as the superposition of the broken symmetry states. The different number of zero energy and zero momentum states is given by the formula

$$|\psi_n\rangle = \sum_k c_k (a_k^\dagger)^n |\psi_0\rangle$$

where a_k^\dagger and a_k represent annihilation and creation operators of Goldstone bosons, while a_k represents the annihilation operator of

CHINESE JOURNAL OF PHYSICS 1978, 27, 191-202

The spontaneous breakdown of a continuous symmetry implies a discrete symmetry of continuous vacuum states. When a particular vacuum state $|\psi_0\rangle$ is chosen, other degenerate vacua $|\psi_n\rangle$ are usually viewed as the superposition of the broken symmetry states. The different number of zero energy and zero momentum states is given by the formula

$$|\psi_n\rangle = \sum_k c_k (a_k^\dagger)^n |\psi_0\rangle$$

where a_k^\dagger and a_k represent annihilation and creation operators of Goldstone bosons, while a_k represents the annihilation operator of

$$|\psi_n\rangle = \sum_k c_k (a_k^\dagger)^n |\psi_0\rangle$$

The spontaneous breakdown of a continuous symmetry implies a discrete symmetry of continuous vacuum states. When a particular vacuum state $|\psi_0\rangle$ is chosen, other degenerate vacua $|\psi_n\rangle$ are usually viewed as the superposition of the broken symmetry states. The different number of zero energy and zero momentum states is given by the formula

The spontaneous breakdown of a continuous symmetry implies a discrete symmetry of continuous vacuum states. When a particular vacuum state $|\psi_0\rangle$ is chosen, other degenerate vacua $|\psi_n\rangle$ are usually viewed as the superposition of the broken symmetry states. The different number of zero energy and zero momentum states is given by the formula

The spontaneous breakdown of a continuous symmetry implies a discrete symmetry of continuous vacuum states. When a particular vacuum state $|\psi_0\rangle$ is chosen, other degenerate vacua $|\psi_n\rangle$ are usually viewed as the superposition of the broken symmetry states. The different number of zero energy and zero momentum states is given by the formula

$$|\psi_n\rangle = \sum_k c_k (a_k^\dagger)^n |\psi_0\rangle$$

[The following are the results of the work of the author, who has not yet published]

Let η be a real number, the integral being $\int_{-\infty}^{\infty} \eta \phi(x)$. We assume that $\eta \phi(x)$ is not orthogonal to $\phi(x)$. Then there is no approximation to $\eta \phi(x)$ by a linear combination of $\phi(x)$ and $\phi(x)$.

$$(\langle \eta \phi(x) | \eta \phi(x) \rangle) = \langle \eta \phi(x) | \eta \phi(x) \rangle = \eta \langle \eta \phi(x) | \eta \phi(x) \rangle$$

Let $\eta \phi(x)$ be a function, then $\phi(x)$ is complex, each value of $\eta \phi(x)$ is a function of $\eta \phi(x)$. This means that there is still no approximation to $\eta \phi(x)$.

Let $\eta \phi(x)$ be a function, then $\eta \phi(x)$ is a function of $\eta \phi(x)$. This means that there is still no approximation to $\eta \phi(x)$.

$$\begin{aligned} \eta \phi(x) &= \eta \phi(x) \cdot \eta \phi(x) \\ \eta \phi(x) &= \eta \phi(x) \cdot \eta \phi(x) \\ \eta \phi(x) &= \eta \phi(x) \cdot \eta \phi(x) \end{aligned}$$

Let $\eta \phi(x)$ be a function, then $\eta \phi(x)$ is a function of $\eta \phi(x)$. This means that there is still no approximation to $\eta \phi(x)$.

$$\eta \phi(x) = \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x) \cdot \eta \phi(x)$$

Let $\eta \phi(x)$ be a function, then $\eta \phi(x)$ is a function of $\eta \phi(x)$. This means that there is still no approximation to $\eta \phi(x)$.

Let $\eta \phi(x)$ be a function, then $\eta \phi(x)$ is a function of $\eta \phi(x)$. This means that there is still no approximation to $\eta \phi(x)$.

$$\begin{aligned} \text{Liquor} &= \frac{1}{2} \text{Bottle} + \frac{1}{4} \text{Bottle} + \frac{1}{4} \text{Bottle} \\ &= \frac{1}{2} \text{Bottle} + \frac{1}{2} \text{Bottle} = 1 \text{ Bottle} \end{aligned}$$

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

© 2004 Blackwell Publishing Ltd, *Journal of Internal Medicine* 255: 103–110

Downloaded from <http://ajphaphapubs.com/> by guest on June 11, 2015

[illegible]

AUTHOR: ZHANG Zongze [1728 1130 876]
LI Bo [0619 1136]

ORG: Both of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "A Microscopic Description of the (p, π) Reactions"

SOURCE: Beijing GAOXING WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 8 No 2, Mar 80 pp 256-260

TEXT (B ENGLISH ABSTRACT): The microscopic description of the π nucleus scattering is introduced to study the (p, π) reactions. The differential cross-section of the ${}^6\text{Li}(p, \pi^+){}^6\text{He}$ at $T_{\text{lab}} = 15$ MeV is calculated by using this method. The shape of the theoretical angular distribution coincides with the experimental data, but the absolute value is about three to five times larger than the experimental value.

AUTHOR: Li Zhong [411 0340 0765]
FENG Yuchun [4775 1268 2498]
CHEN Yuchuan [4115 0677 1188]
WU Yizhi [0775 0768]

ORG: All of the Institute of Atomic Energy, Chinese Academy of Sciences

TITLE: "Calculations of the Cluster Structure States of ${}^6\text{Li}$ "

SOURCE: Beijing GAOXING WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 8 No 2, Mar 80 pp 261-264

TEXT (B ENGLISH ABSTRACT): In this paper, the reduced transition probabilities $B(E2)$ between the states of ${}^6\text{Li}$ cluster states and $\sqrt{r^2}$ of ${}^6\text{Li}$ are calculated. The results obtained here are analogous to those of ${}^6\text{Li}$.

Author: 李正, 王立 (1969 1172 1829)
Li Zheng, Wang Li

Unit: 中国科学院高能物理研究所, 中国科学院
Science

Title: "The Study of Momentum Distribution of High Energy Heavy Ion Inclusive Reaction"

Source: 物理学报, 1980, Vol. 3, No. 5, May 80 pp 265-270
[PHYSICA ENERGIAE FORTIS ET PHYSICA
CHINEENSIS]

EX-ENGLISH ABSTRACT: In this paper, we consider nucleus-nucleus collisions by the aid of nucleon-nucleon elastic scattering and give a formula for the projectile fragment momentum distribution of high energy heavy ion inclusive reaction. Using Glauber's approximation, according to the experimental momentum distribution, we obtain a relative momentum distribution between the various fragments in the projectile. The theoretical results show that if the band of the projectile is higher, the relative momentum distribution of the fragments in the nucleus is more narrow, so that the relative distance between them is larger.

Author: 王立, 李正 (1967 3163 3166)

Unit: 物理系, 北京大学

Title: "On the Irreducible Representations of the Compact Simple Lie Groups"

Source: 物理学报, 1980, Vol. 3, No. 5, May 80 pp 271-285
[PHYSICA ENERGIAE FORTIS ET PHYSICA
CHINEENSIS]

EX-ENGLISH ABSTRACT: In this paper, using the method employed in two previous papers ("On the Irreducible Representations of the Compact Simple Lie Groups of Rank 2 (I) and (II)"), the irreducible representations of the groups E_6, F_4, G_2 are discussed. A method for calculating the irreducible representations of these groups is given. In addition, some of the low dimensional representations of these groups are calculated.

AUTHOR: KANG YUPING [1952 1952 1957]
ET YUPING [1956 0151 5481]

ORIG: Inst of Physics, University.

TITLE: "Ward-Takahashi Identities for Gauge-Invariant Proper Vertices"

ORIGIN: JOURNAL QIANJING WULI YU HE WULI [PHYSICA SINENSIA TAPPI ET PHYSICA SINENSIA] in Chinese Vol. 9 No. 4, May 80 pp 286-290

TEXT OF ENGLISH ABSTRACT: A convenient form of the $Ward-Takahashi$ identities for gauge-invariant proper vertices is derived and its application to applications is discussed.

AUTHOR: W. G. W. [1952 1952 1957]

ORIG: Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "Quantization of the Photon Field and Vector Mesons"

AUTHOR: JOURNAL QIANJING WULI YU HE WULI [PHYSICA SINENSIA TAPPI ET PHYSICA SINENSIA] in Chinese Vol. 9 No. 4, May 80 pp 291-295

TEXT OF ENGLISH ABSTRACT: We discuss the quantization of a massive vector field using the Lagrangian multiplier method. The wave equation of the field appears in three-dimensional momentum space is given and the solution of dipole ghosts explicitly demonstrated. One of the ghosts is not an eigenstate of the Hamiltonian and can be eliminated by boundary conditions. If the vector field is coupled to conserved currents, the other ghost has no observable effects. Therefore this field theory describes the photon. This problem has been studied by Salam, but his analysis is incorrect. The extension of this method to spin $3/2$ massive field is discussed.

AUTHORS: MA Wanjing [7456 4850 92M1]
LIN Guizhen [2651 2506 3503]

ORIG: Inst of the Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "Elastic Scattering of Hadrons from Nuclei at High Energy and the Short Range Correlation in Nuclei"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 302-312

TEXT OR ENGLISH ABSTRACT: The effects of short range correlation in nuclei on elastic scattering of hadrons from nuclei at high energy are studied by means of Glauber multiple diffraction theory, using Jastrow correlated wave functions. To this end, a determinant form of Jastrow correlated wave functions is used. Calculations have been carried out for π^- - ^{12}C elastic scattering at 260 MeV, and they are compared with the experiment data. The results show that the influence of the short range correlation on the different cross sections is quite important.

AUTHORS: DAI Xianxi [2071 7359 3588]
HUANG Fayang [7806 4099 3142]
NI Guanglong [0242 0342 3518]

ORIG: All of Fudan University Institute of Modern Physics

TITLE: "The Bound State Energy Levels of Monopole Pair and of Charged Monopole-Dirac System--Some Singular State Problems in Relativistic Quantum Mechanics"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 313-321

TEXT OR ENGLISH ABSTRACT: In this paper, four kinds of singular state problems in relativistic quantum mechanics and their solutions are summarized. In the references it has been pointed out that in some quantum mechanical problems involving singular states there exists phase angle uncertainty. The principle eliminating this kind of uncertainty, the orthogonality-variation principle, has been obtained. The results of scattering and bound state problems of a neutral monopole and a charged Dirac particle are consistent with those obtained by C. N. Yang, Kazama and Goldhaber. In the references and this paper the Casimir-type equations determining the bound states of monopole pair and exotic atoms consisting of a charged monopole and an electron are obtained. In this

paper these energy levels are calculated numerically. Because in these equations the number of singular points is infinite and the functions oscillate rapidly, usual calculation methods are not suitable in these cases. After analyzing these equations and determining the positions of singular points and the ranges of energy levels, these energy levels are calculated by computer.

It is pointed out that the number of these energy levels is infinite and the positions of positive and negative energy levels are asymmetric. The negative energy levels do not appear until β is very near -1 . The values of the positive energy levels are spread in the range $0.9998 < \beta < 1$. They are near those of the hydrogen-like atom and similar to those of impurity in solid. This is a perturbation problem of singular states to which the usual perturbation theory cannot be applied.

The energy levels of monopole pair are not similar to those of the hydrogen-like atom. In the range $0 < \beta < 0.99$ there are many energy levels with positive and negative energy.

It is also pointed out that for the hydrogen-like atom, (195) (11), some negative energy bound state solutions satisfying asymptotic boundary conditions are possible. The ordinary standard condition does not contain these states.

but the orthogonality criterion does exclude them. This agrees with the agreement with that reached by Professor C. N. Yang.

The results shown suggest that the orthogonality-variation principle is reasonable.

AUTHORS: WU Yongshu [0702 6102 2514]
LU Qixiong [7120 0790 6972]

ORG: WP of the Institute of Theoretical Physics, Chinese Academy of Sciences; LU of the Institute of Mathematics, Chinese Academy of Sciences

TITLE: "Right-Translation Invariant Metrics and Variational Principles on a Principal Bundle--Treated as the Union of Space-Time and an Internal Space"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 322-336

TEXT OF ENGLISH ABSTRACT: In this paper, we discuss how to assign a metric on a principal bundle and how to rewrite the variational principles for a particle and for matter fields in an invariant form on the bundle in the principal-bundle formulation of gauge theories. We show that the right-translation invariant metric on the bundle must contain quantities which transform exactly as gauge potentials, thus providing a new formalism for gauge fields. And we formulate the variational principle for a particle moving in the gauge field as follows: The particle moves along a horizontal geodesic on the principal bundle. Starting from this we derive the Wong's equations of motion.

In addition, we elucidate the physical viewpoint which treats the bundle space

[Continuation of GAONENG WULI YU HE WULI Vol 4 No 3, May 80 pp 322-336]

as the union of space-time and the internal space. Advantages of this viewpoint for understanding the essentialities of gauge transformations and gauge invariance and for establishing unified theories of gravitation and gauge fields are also discussed.

AUTHOR: QING Chengful [1987 2110 3843]

ORG: Institute of Theoretical Physics, Chinese Academy of Sciences

TITLE: "On the Coulomb Disintegrations of Atoms (e^+e^-) and ($\mu^+\mu^-$)"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 337-343

TEXT OF ENGLISH ABSTRACT: The cross sections and energy spectra of the Coulomb disintegration of (e^+e^-) and ($\mu^+\mu^-$) at high energies are calculated by using the perturbation expansion of composite field theory and the approximate covariant solution to Bethe-Salpeter equation with Coulomb potential and spin 1/2, -1/2. The cross sections of disintegration of (e^+e^-) are about 20 percent less than the cross sections calculated by others. In addition, the results obtained in this paper indicate that the cross sections of Coulomb disintegration of (e^+e^-) or ($\mu^+\mu^-$) at high energies in singlet state and triplet state are exactly equal, while in Dud'yan's work this occurs only when $n=2$, and when $n=1$ the differences between the cross sections in the two states are about 25 percent. It is very likely that there were some mistakes in these calculations.

AUTHOR: QIN Keyu [6009 0344 1342]

ORG: Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "The Interaction of a High Energetic Proton with a Nucleus--The Relation of the Produced Particles with the Nuclear Mass Number A"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 345-348

TEXT OF ENGLISH ABSTRACT: Suppose that a high energetic proton interacts with a cluster of n particles in a nucleus; the mean multiplicity of this interaction and that of pp interaction follow the same law: $n \propto \sqrt{s}$. Using the Glauber theory we get $R(A) = n_{pA}/n_{pp} \approx 1.26A^{1/3}(A^{1/3} + 1)^{-2/3}$. This formula explains the current experimental result quite well.

AUTHORS: REN Jirong [0117 2417 0120]
LU Bailing [7120 4482 5376]
SU Shi [5685 1395]
WANG Yunxin [3769 0336 0207]
WANG Dianchen [3769 3013 5256]
PAN Jirong [3382 4949 2837]
HE Mao [0149 3847]
ZHANG Naijian [1728 0035 0256]
CAO Pelyuan [2580 1014 0954]
CHEN Yunhong [7115 0336 7703]

ORGL: REN, LU, SU, WANG Yunxin, WANG Dianchen and PAN all of the Institute of High Energy Physics, Chinese Academy of Sciences; HE, ZHANG, CAO all of Shandong University; CHEN of Zhengzhou University

TITLE: "An Ultra-High Energy Nuclear Interaction Event of Large Transverse Momentum"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 349-355

TEXT OF ENGLISH ABSTRACT: An emulsion chamber of 13 tons Pb was exposed on Mt. Kailasa (5500 m above sea level) of Tibet. A very interesting ultra-high

[Continuation of GAONENG WULI YU HE WULI Vol 4 No 3, May 80 pp 349-355]

energy event with total observed energy $\Sigma E_p = 445$ TeV was obtained. The profile of the event is characterized by two groups of high energy showers, separated clearly from each other. Preliminary analysis shows that the particles giving rise to these two shower groups have extraordinarily large transverse momenta. This predicts the possible existence of a new mechanism in ultra-high energy nuclear interactions, which has certain characteristics different from those predicted by the H-quantum and SH-quantum models.

AUTHOR: ZHU Runsheng [2612 3387 1913]

ORG: Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "A New Way for Sensitizing Cellulose Acetate Solid State Track Detector"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FONTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 356-367

TEXT OF ENGLISH ABSTRACT: It is well known that cellulose acetate (CA) can be sensitized by adding oxidizing agents in etching solutions, but the effect is not very strong. In search of more effective methods, we have put forward the hypothesis of the possibility of catalytic oxidation sensitization, in the light of which we found that copper salt can catalyze hypochlorite oxidation sensitization. Then we established the optimum etching conditions that can significantly enhance the sensitivity of the specially selected cellulose acetate detector material, thus enabling it to record α particles with 9.5 MeV and protons up to 750-800 or a little higher KeV in energy; that is to say, its sensitivity is higher than any cellulose acetate plastic (CA) yet known.

AUTHOR: HU Jimin [5170 3444 3046]
ZHONG Yunxiao [6945 0061 7187]

ORG: Both of Beijing University

TITLE: "Brownian Motion Model of the Fission Process"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FONTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 368-373

TEXT OF ENGLISH ABSTRACT: Fission process is considered as a multidimensional Brownian motion. The Fokker-Planck equation is solved and the fission probability in the steady state approximation is calculated. The results are compared with the Bohr-Wheeler theory. Numerical calculations are performed for the fission of ^{235}U and the results are discussed.

AUTHOR: YANG Zesen [2799 3419 2773]

ORG: Beijing University

TITLE: "Improvement of the Coupled Channel Optical Model Calculation"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 374-381

TEXT OF ENGLISH ABSTRACT: By using the iteration of the linear relationship between two sets of radial wave functions at two neighboring points, the coupled channel optical model calculation is improved.

The merits of this method are: (i) No assumption needs to be made on the values of the radial wave functions near the origin. (ii) Multi-point formula can be conveniently adopted at the starting stage. (iii) Iteration process can always be proceeded to the external region from the origin.

AUTHOR: ZHANG Jingye [1728 2417 2814]

ORG: Institute of Modern Physics, Chinese Academy of Sciences

TITLE: "On the Angular Momentum Difference $i(\omega)$ between Super-Band and Ground-Band"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 382-385

TEXT OF ENGLISH ABSTRACT: Some discussion is made for the angular momentum difference $i(\omega)$ introduced by A. Bohr and B. Mottelson.

AUTHOR: GAO Yuanyu [7559 0337 5030]
ZHANG Jingye [1728 2417 2614]

ORG: Both of the Institute of Modern Physics, Chinese Academy of Sciences

TITLE: "A Possible Explanation of the Double Backbending of Yrast Band for Nuclei $^{122,124,126}\text{Te}$ "

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 386-389

TEXT OF ENGLISH ABSTRACT: A possible explanation of the mechanism for the double backbending in the yrast band of nuclei $^{122,124,126}\text{Te}$ is given.

AUTHOR: ZHANG Yuanzhong [1728 0337 0112]
ZHAO Zhiyong [6392 1807 3144]

ORG: ZHANG of the Institute of Physics, Chinese Academy of Sciences; ZHAO of Beijing University

TITLE: "Supersymmetric 'Linear' Multiplet and Superfields"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 390-393

TEXT OF ENGLISH ABSTRACT: In this paper, we investigate some properties of the "linear" superfields, and give the variation of this "linear" multiplet under an infinitesimal supersymmetry transformation.

AUTHOR: LIU Xianhui [0491 2009 6540]
WU Zongren [0702 1350 1869]
HUANG Chaohui [7806 2600 2547]
LI Yangguo [2621 2254 0948]

ORG: LIU and LI both of the Institute of High Energy Physics, Chinese Academy of Sciences; WU and HUANG both of Guangxi University

TITLE: " π -Nuclear Double Charge Exchange Reaction and Nuclear Structure"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 394-397

TEXT OF ENGLISH ABSTRACT: Using Glauber's multiple scattering theory, and using coherent fluctuation nuclear model, the double charge exchange (DEC) reaction cross sections for π on ^{16}O and ^{18}O have been calculated. The calculated values of the ratio of $\sigma(^{18}\text{O}(\pi^+, \pi^-)^{18}\text{Ne})_{\text{g.s.}}$ to $\sigma(^{16}\text{O}(\pi^+, \pi^-)^{16}\text{Ne})_{\text{g.s.}}$ fit the experimental data quite well. Just as predicted by our calculation, the angular distribution of $^{18}\text{O}(\pi^+, \pi^-)^{18}\text{Ne}_{\text{g.s.}}$ in a recent experiment exhibits an evident dip around 23° .

AUTHOR: SA Benhao [5646 2609 6275]
ZHANG Xizhen [1728 6932 3791]
LI Zhuxia [2621 4376 7209]
SHI Yijin [2457 5030 2516]

ORG: All of the Institute of Atomic Energy, Chinese Academy of Sciences

TITLE: "A Primary Research of the Phonon Renormalization of Nuclear Field Theory"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 398-400

TEXT OF ENGLISH ABSTRACT: By taking proper self-energy subdiagrams of phonon, the Dyson's equation and the corresponding eigenequations of the renormalized phonon are obtained. The sum rule and the energy weighted sum rule of phonons are given.

AUTHOR: CHEN Jiaer [7115 0163 3167]

ORG: Beijing University

TITLE: "The Motion of Ions in RF Ion Beam Choppers"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 401-404

TEXT OF ENGLISH ABSTRACT: A formula describing the ion beam envelope in RF choppers with fringing field is derived. An analytical expression for "Magic ϕ " and related examples are given. Methods for eliminating the inclination of the chopped beam are discussed.

AUTHOR: WU Xizhen [0702 6932 4176]
LI Sumei [2621 4790 2734]

ORG: Both of the Institute of Atomic Energy, Chinese Academy of Sciences

TITLE: "A Study on the Heavy Nuclear Potential Energy Surface (Liquid Model Part)"

SOURCE: Beijing GAONENG WULI YU HE WULI [PHYSICA ENERGIAE FORTIS ET PHYSICA NUCLEARIS] in Chinese Vol 4 No 3, May 80 pp 405-408

TEXT OF ENGLISH ABSTRACT: In the present paper, the parametrization for the nuclear surface is chosen properly. The formulae for the nuclear deformation energy, including surface energy, coulomb energy and curvature energy, are derived. The potential energy surface of the heavy nuclei, such as ^{235}U , ^{252}Fm , et al., and the barrier heights of many heavy nuclei are calculated.

9717

CS0: 4009

PUBLICATIONS

TABLE OF CONTENTS OF 'DONGWU XUEBAO' NO 4, 1979

Beijing DONGWU XUEBAO [ACTA ZOOLOGICA SINICA] in Chinese No 4, Dec 79
inside back cover

[Text] The Establishment and Characterization of a Human Esophageal Cancer Epithelial Cell Line and Its Epithelioid and Fusiform Clonal Lines.....Li Shende [2621 3947 1795] and Wang Xiuqin [3769 4423 3830], both of the Department of Cell Biology, Cancer Institute, Chinese Academy of Medical Sciences (303)

Histological and Histochemical Studies on Embryonation of Ova of Schistosoma japonicum.....He Yixun [0149 3015 0534] and Yang Huizhong [2799 1920 0022], both of the Institute of Parasitic Diseases, Shanghai, Chinese Academy of Medical Sciences (309)

Histological Studies on the Toxic Effects of Phenol and CCl₄ on the Liver and Kidney of Common Carp and Crucian Carp.....Jiang Lifan [1203 4409 3600] and Zhang Kuitao [1728 3843 3447], both of Changjiang Fisheries Research Institute (314)

The Blood Index and Organ Coefficient of the Mink Breeding in the Plateau Region.....Liu Jike [0491 1323 4430] and Gong Shengxing [7895 3932 5281], both of the Qinghai Institute of Biology, Xining (319)

Study on a Quartan-type Simian Malaria Parasite in Macaca assamensis from Guangxi.....Long Zupei [7893 4371 1014], Xu Zhenggong [6079 2398 2162], Ye Yiyang [5509 1150 5391], He Dengxian [0149 4098 6343], Zhou Shihu [0719 0013 4375] and Zhao Bangquan [6392 6721 2938], all of the Department of Parasitology, Guangxi Medical College (327)

On the Development of Plasmodium cynomolgi in Anopheles stephensi.....Chen Peihui [7115 0160 1920], Kong Defang

[1313 1795 5364], Wang Fengyun [3769 7685 5366], all of the Division of Parasitology, Beijing Second Medical College; Han Fenglian [7281 7685 6647], Unit 59175, PLA, China

(335)

The "Black Root" Disease of the Razor Clam in Estuary of Jiulong River, Fujian.....Tang Chongti [0781 1504 1912], Parasitology Research Laboratory, Xiamen University, Fujian; Xu Zhenzu [6079 2182 4371], Department of Oceanography, Xiamen University, Fujian

(345)

Studies on the Metacercaria and Adults of Paragonimus westermani in Southern Anhui.....Fan Peifang [2868 1014 2455], Chen Daixia [7115 7818 7209], Zhang Zihe [1728 1311 0735] and Liu Jiarong [0491 1367 2837], all of the Department of Parasitology, Bengbu Medical College, Anhui

(352)

Light and Scanning Electron Microscopic Observations on Three Species of Paragonimus.....Fan Peifang [2868 1014 2455] and Chen Daixia [7115 7818 7209], both of the Department of Parasitology, Bengbu Medical College, Anhui; An Gengjiu [1344 5087 0046], Department of Parasitology, Wannan Medical College, Anhui

(358)

The Development of Thermoregulation in the Nestlings of the Tree Sparrow.....Li Shichun [2621 0013 4783], Liu Bingqian [0491 3521 6197] and Liu Xiyue [0491 0823 1878], all of the Institute of Zoology, Chinese Academy of Sciences, Beijing

(369)

Note: English abstracts for all articles are provided in the journal.

9717

CSO: 4020

PUBLICATIONS

TABLE OF CONTENTS OF 'LINCHAN GONGYE SHEJI', JANUARY 1980

Beijing LINCHAN GONGYE SHEJI [DESIGNING FOR THE FOREST PRODUCTS INDUSTRY]
in Chinese No 1, 18 Jan 80 inside back and back cover

[Text] Material Processing

An Investigation of the Numerical Control [NC] Advancing Device of Band Saws...Ding Suzhen [0002 5685 7201] of Shanghai Huanghe Furniture Plant.....	1
Orthogonal Test Method for Selecting Welding Parameters...Liu Zhifu [0491 1807 4395] of Saw Tooth Strengthening Subject Study Group, Heilongjiang Institute of Lumber Industry.....	6
New Design of Periodic Type Lumber Drying Chamber (A Translation).....	9
MJ752-60 60" Total Hydraulic Automatic Advancing Band Saw... Guangzhou Comprehensive Lumber Main Plant.....	13

Plywood

Electrical Gear-Drive Equipment of MZ1127/16 Rotary Cutting Tool... Shi Tianxi [0670 1131 6932] of Forest Products Industry Designing Academy of the Ministry of Forestry.....	15
Several Ways of Improving the Rate of High Grade and the Rate of Thin Boards in Plywood...Technology Department, Changchun Plywood Plant.....	28
Procedure and Technique of Manufacturing Wooden Artificial Boards (A Translation).....	31

Fiberboard

General Condition of Development of Intermediate Density Fiberboard in the United States...Xue Peian [5641 1014 1344] of Forest Industry Designing Academy of the Ministry of Forestry.....	40
Investigation Into the Productivity of the Wet Method of Thermo- compression Procedure of Making Hard Fiberboard With an Annual Production of 15,000 Tons... Zhuang Hua [8369 5478] of the Fiberboard Shop, Ganhe Lumber Comprehensive Processing Plant.....	48
Preliminary Study on Ways of Treating the Waste Water From the	

Wet Method Fiberboard Production...Jiang Shan [3068 1472].....	55
Closed Cycle of Waste Water Realized in the Superior Fiberboard Plant of the United States (A Translation).....	60

Particle [Sawdust] Board

Direct Printing of Wood Grain on Artificial Boards...Ji Xikong [1213 1385 1313] Zhao Runhua [6392 3387 9478] Zhang Shuqin [1728 2572 0613].....	62
Application of Lignin Sulfonate in the Production of Wooden Particle Board (A Translation).....	72
Reconstructing the Oil Line System of SY Loading and Unloading Machine...Gu Mingcheng [7357 6900 2052] Zhang Minguang [1728 2404 0342] Zhang Yunhua [1728 0061 9478].....	75
Sequential Start of Multiple Asynchronous Electrical Motors... Huang Hua [7806 9478] of Forest Industry Designing Academy of the Ministry of Forestry.....	76

Potent Chemistry

A Study of the Primary Aldose Distillation Column...Chen Zhenxin [7115 2182 2450].....	78
Successful Reconstruction of WXL2-13 Type Furnace to Burn Anthracite ...Teng Zhaoqiang [2582 2507 0023] of Wengyuan Forest Products Chemical Engineering Plant, Guangdong Province.....	84
Conditions and Prospects of the Resin Industry in Brazil (A Trans- lation).....	85

Invention, Creation

10 Items on Lumber Production; 4 Items on Plywood; 6 Items on Fiberboard; 15 Items on Particle Board; 10 Items on Surface Decoration.....	89
General Conditions of Production of Forest Products in Some Countries of the World.....	inside front cover

Reference Data

Related Indices of Plywood, Fiberboard, Particle Board.....	14
Related Indices of Sawwood.....	30

6158

CCC: 4008

END

END OF

FICHE

DATE FILMED

August 24, 1980

D.S.